# Children's Ideas about their World: A Study Exploring the Hundred Languages of Children and How Educators Support Them

Doctoral Dissertation

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## Abstract

Children are capable, competent, and intelligent members of the early years community (Edwards, 2011; Fyfe, 2011, Ontario Ministry of Education, 2014 & 2016, Wexler, 2004). The purpose of this research study is to explore the ideas children are developing about their world and how their educators support them in their discoveries. This qualitative mini-ethnographic case study investigates how children represent their understandings by considering the Reggio Emilia pedagogical strategy of the hundred languages of children and its connection to how children generate, test, and/or confirm their ideas about the world around them. The participants included 30 children and 7 educators from a Reggio Emilia inspired early learning setting. Data sources included educator interviews, video-based observations of the learning environments, and through-the-window observations. All data was collected at a distance due to COVID 19 protocols limiting in-person research. A qualitative analysis of the data revealed that the children were actively exploring a vast number of ideas about their world and used repeated actions in the form of play schemas to support their investigations to make further connections. Educators supported the children by preparing the classroom environment with purposeful materials, providing educator assisted/provoked experiences, engaging in positive interactions, supporting their safety and welfare, and participating in ongoing professional development. Considering the main findings of this research, the author offers three key conclusions as take-aways. These conclusions include the themes of power between the educator and the children in the learning environment, relationships between the children and their educators, their peers, and the learning environment, and risk taking among the children.


*Key words*: Reggio Emilia, children's ideas, researching children, hundred languages, play schemas, materials, relationships, co-constructors, quality early learning.

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I had the pleasure of working with/collaborating with extraordinary early years professionals in this study. Thank you for your open arms, and warmly welcoming my research.

To my life partner and family. Thank you for your love, support, and understanding during the many late evenings and weekends I spent away working. This work would not have been possible without you and your patience, and for that I am eternally grateful.

# Dedication

I dedicate this work to my three boys, who each contributed a piece to this study:

To my first born, whom I carried while completing and defending my comprehensive portfolio.

To my second born, whom I carried through the proposal and data collection process.

To my third born, whom I carried through the dissertation writing process.

This work is for you. May your hundred languages shine a bright light on your future endeavors.

xoxo Mommy.

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# Chapter 1: Introduction

## Context

*The hundred languages of children* (hereafter called the hundred languages) is a pedagogical strategy used in The Reggio Emilia approach to describe the verbal and non-verbal modes of communication children use to express themselves and to develop connections with the world around them (Edwards, Gandini & Forman, 1998). The hundred languages are seen in the ways children use materials and resources available to them to investigate and develop new understandings about the world around them (Harcourt, 2015). The Reggio Emilia Australia Information Exchange (2021), a Reggio inspired organization, describe the hundred languages as being: expressive, communicative, symbolic, cognitive, ethical, metaphorical, logical, imaginative, and rational. Forman and Fyfe (2011) describe the importance of distinguishing between the concept of a symbol and a language when exploring the hundred languages of children. For example, placing cut-outs of leaves on a poster board is an example of a symbol of a leaf; however, if children intentionally place the leaf cut-outs to show the presence of a strong gust of wind, it suggests that the children are using the language of leaves to tell a story (Forman & Fyfe, 2011). Additionally, it is the "relation among the symbols that converts the medium into a message, and it is the presence of an intended message that motivates children to negotiate shared meanings and to co-construct knowledge" (Forman & Fyfe, 2011, p. 158). It is through the shared meanings and co-construction of symbols that children can manipulate the materials around them to send a message and construct knowledge about the world around them.

In his poem titled, *No Way. The Hundred is There*, Loris Malaguzzi (1996) explores the concept of the hundred languages of children (Appendix A). The poem emphasizes that children communicate with more than just spoken words. "The child has a hundred languages a hundred

hands a hundred thoughts a hundred ways of thinking of playing, of speaking" (Par. 1). The poem then describes that society *steals* nighty-nine of their languages by taking away their freedom to express themselves and limiting the ways children can communicate their ideas. Malaguzzi sends a powerful message at the conclusion of the poem. He states "The child says: "No way. The hundred *is* there" (para.11/12). Despite society limiting the ways children can communicate, when one has a strong image of the child as capable and competent, they then have a lens to see their hundred languages. If one takes the time to *listen* to children, they will see children can communicate in a hundred ways, and a "hundred hundred hundred more".

When developing a research study where one intends to observe young children, a researcher plays an important role in ensuring the approaches are suitable for children and support them to express their knowledge in appropriate ways. Conversation can occur with even the youngest of beings, and the first step in responding to communication exchanges between adults and young children is to view them as capable and powerful communicators from birth onwards (Ontario Ministry of Education, 2014). It is the responsiveness to young children's communication that wires the child's brain for learning, whether it is subtle verbal and non-verbal cues in young infants or the patience in responding to a preschooler's long tale about their day (Campos, Frankel & Camras, 2004; National Scientific Council on the Developing Child, 2007). Ontario's *Pedagogy for the Early Years* describes that "when educators are aware of and able to understand and respond to the many 'languages' children use to communicate, they give every child a 'voice'" (Ontario Ministry of Education, 2014, p. 41). By the age of 6 years-old, a typically developing child has an expressive vocabulary of approximately 2,600 words but a receptive vocabulary of more than 20,000 words (Owens, 1996). Although children may not

have the vocabulary to express their thoughts using spoken language, they can understand much more than what they can express verbally (Goodwyn, Acredolo & Brown, 2000).

Children bring many voices to the research field that need to be uncovered and therefore it is important to incorporate multiple ways of observing and documenting their interactions. Participants in this study were toddler-aged children, 14 months- 30 months (2.5 years old) and used very minimal verbal communication throughout the observations. When working with toddler children, it is important to provide environments and materials that meet the needs of all children because they are still developing their receptive and expressive language skills (Best Start Panel on Early Learning, 2007). Toddler-aged children engage in complex communication and expression using their bodies, words, and the materials around them (Ontario Ministry of Education, 2014). This form of communication is supported through play and inquiry in quality learning environments which support opportunities for creative expression (Ontario Ministry of Education, 2014). The Ontario Ministry of Education (2014) describes that "when children manipulate materials, explore music and movement, create symbols (e.g., mark-making), and engage in imaginative expression (e.g., visual art) and dramatic play, they are communicating" (p. 41). Creative expression in toddler-aged children supports their critical thinking and problem-solving skills, as well as their memory, sense of identity, and solidifies their thinking and learning about the world around them (Callaghan & Wien, 2012). Many of the explorations the children participated in included forms of creative expression such as, large group mural painting, using markers to make marks on paper as well as their own bodies (i.e. arms and hands), and manipulating clay with their hands. These creative explorations led to the children sharing with a friend, creating a product both individually and as a group, becoming aware of their bodies, and exploring sensory experiences.

**Statement of Purpose**

The purpose of this research study is to observe and interpret the ideas children are developing about the world around them, and the different *languages* they are using while working with their ideas in a Reggio Emilia inspired child-care center located in Ontario, Canada. An objective of the study is to observe what children are saying, doing, and representing in the development of their ideas and how their educators are supporting them in this journey. I explore how children represent their understandings by considering the Reggio pedagogical strategy of the hundred languages of children in a Reggio Emilia inspired child-care center. The research study seeks to unravel the variety of modalities children use to test their ideas and understandings about the world around them.

Claxton (1990) describes that "learning at its most general is the business of improving our theories, elaborating and tuning them" (p. 23). A later study by Peters and Davis (2014), in a New Zealand educational context, uncovered that children were working on ideas connected to making sense of: the social world, the physical world, and of language. Peters and Davis (2014) described that through active engagement and supported agency, the children were able to make sense of their world in purposeful and meaningful ways. Bucher and Pindra (2020) explored infant and toddler's ideas in connection to science, technology, engineering, arts, and mathematics (STEAM) and how educators can support their curiosities and provide developmentally appropriate STEAM learning. The study concluded that infant and toddler-aged children are curious and want to figure things out about their world. The children in this study were active, competent, and engaged learners (Bucher & Pindra, 2020). A major finding from the research showed that learning occurs in the context of relationships with both materials and responsive educators attuned to the children's strengths and interests (Bucher & Pindra, 2020).

Curtis and Jaboneta (2019) describe a collaborated approach to supporting children's idea exploration. This type of approach often requires educators to pause, suspend their adult view, and allow the children to pursue and share their ideas and questions (Curtis & Janoneta, 2019) which allows the educator(s) time to notice and better understand the rich and cooperative learning that is taking place during the exploration of a new (or old) idea (Curtis & Janoneta, 2019). When working with young children and supporting their idea development, it is important to provide opportunities that support their active participation in a rich learning environment with responsive educators.

With this dissertation work, I hope to contribute to the literature on toddler-aged children's ideas about the world around them. When researchers take the time and effort to find ways of listening to children in research, they can learn a great deal about young children's lives (Mukherji & Albon, 2018). The observations and interviews for this research study were gathered during the COVID 19 pandemic of 2020-2023. To support the exploration of the children's ideas while adhering to the COVID-19 guidelines, observations of the children were made using innovative data collection methods including "through the window" observations. This study contributes to the literature on Reggio Emilia inspired practice in Ontario's early learning settings, documents the ideas toddler-aged children are exploring, the languages they are using to test these ideas, and examines how educators support the development of ideas in the classroom environment.

**Rationale and Significance**

The research study gave insight into children's representations of their understandings of the world around them. Children are most affected by the environments in which they learn and

are important participants in the research of these settings (Einarsdottir, 2005). The Reggio Emilia approach, founded by Loris Malaguzzi, positions children's voices at the center of the curriculum, emphasizing a strong image of the child where wisdom is achieved by asking, listening, and walking with children (Fyfe, 2011; Wexler, 2004). The approach is transformative because it views children as unique individuals (Edwards, 2011) who are powerful, resourceful, and capable of highly complex ideas (Wexler, 2004). The *How Does Learning Happen? Ontario's pedagogy for the early years* document (Ontario Ministry of Education, 2014), a resource about learning through relationships for those who work with young children and their families, suggests that when educators acknowledge and listen to the many different *languages* children use to express themselves, they give the children a voice. When collecting data on children, it is important to provide them with environments and situations that recognize, respect and accommodate non-verbal forms of communication such as play, body language, facial expression, or drawing and painting, to demonstrate their understandings (Lansdown, 2010). The children in this study were observed during free and open play time in their classroom environment which was rich with materials and opportunities that were tailored to their interests.

Adults who view children as incapable and irresponsible (Montandon & Osiek, 1998) do not necessarily honour children's voice and perspectives in the research process. Traditionally, children have been viewed as adults in the making, as future beings, rather than beings in the present (Montandon & Osiek, 1998) and much of the communication adults have with children involves directing them, rather than connecting with them (Clinton, 2013). Adults have trouble recognizing children's capacities in research because many view them from an adult perspective which diminishes their abilities, because they are not considered capable due to their young age (Lansdown, 2004). Adults often have difficulty trusting children: trusting them to be good, to use

relevant knowledge, and to be responsible during the research process (Cook-Sather, 2002). A lack of trust from the researcher can result in children's authentic perspectives being absent from the research involving them. Clark, Kjorholt, and Moss (2005) explain that children lose most of their languages through adults' failure to acknowledge their existence. Ceballos and Susinos (2022) advocate for a need to diversify research listening strategies, and to give meaning to children's ideas in a respectful way. They explain that preverbal children are often given fewer opportunities to "express, justify and affirm their interests" in research studies (Ceballos & Susinos, 2022, p. 92). To foster children's perspectives in the research process, they need opportunities to explore their thinking in a variety of different voices, such as through body movements, materials, and facial gestures, in addition to spoken language. The innovative methods used in this study supported the researcher in "listening" to the children while also respecting the social distancing and COVID-19 protocols in place.

**Grounding the Research in my Personal Experience**

Mukherji and Albon (2018) express the importance of reflexivity in research and describe the researcher, their personal history, subjectivities, and biases, as an important part of a research study. With the intention to be reflexive, I will describe the professional lens in which I examine this research study. I am a Registered early childhood educator (RECE) as well as an Ontario college teacher (OCT) at the Primary/Junior level. I have a passion for early years' education and a keen interest in the Reggio Emilia approach to education because of its strong image of the child supported by the philosophies of the approach. I have focused most of my graduate work in the areas of children's voice and participation in research as well as exploring early learning approaches in an Ontario learning context. I had the privilege of participating in a Reggio study tour in March 2018 in Reggio Emilia, Italy where I explored the approach by visiting preschools

and engaging with educators and *pedagogists* (pedagogical coordinators). I believe young children to be capable, competent, and intelligent members of the community and am a steadfast advocate for their voices to be heard in all areas, including educational research.

While undertaking the PhD program, I developed a new lens in which I now view my work. I became a mother. Corlett and Mavin (2018) describe the importance of acknowledging our positionality as qualitative researchers because it can influence and shape the knowledge and outcomes produced during the research. While participating in data collection for this research study, I was carrying my second oldest son and raising my oldest son earth side, a toddler at the time. I believe this to be important to this research study because of the age-group of the population in my study. I was researching and observing toddler-aged children, while also being a first-time mom to a growing toddler at home. The connections I was able to make because of the unique stage of motherhood I was in supported my deep reflection and connection to the children I was observing and their interactions with their environment. I was able to use my firsthand knowledge as a mother to support my interactions with the research data and my observations of the children in this study. This research study was designed to explore topics that are near and dear to my heart: the Reggio Emilia approach and early childhood education. It is my hope that this study will contribute to research in the early years, specifically uncovering children's ideas and perspectives, as well as push the professional growth and understanding of children's learning and development, among others.

## Research Questions

This dissertation study explored the following research questions to understand the development of children's ideas about the world around them and how they explore and express themselves in a Reggio inspired child-care setting.

1. What are the ideas children might be generating, testing, and/or confirming in a Reggio inspired learning environment?

    - In which ways might children be generating, testing, and/or confirming these ideas?

2. How are educators fostering children's development of their ideas in a Reggio inspired learning environment?

## Definition of Reggio Emilia Concepts

Included below is a table of common Reggio Emilia concepts. These concepts set the foundation for understanding different concepts in the Reggio Emilia approach. The concepts defined below expand on the Reggio Emilia approach and may assist in the interpretation of the research results. A more through explanation of Reggio Concepts can be found in Chapter 2: Literature Review under the heading: Principles of the Reggio Emilia Approach

**Table 1**

*Defined Reggio Emilia Concepts*

| Concept | Definition |
|---|---|
| Collaboration: | Collaboration is achieved in a Reggio setting by having the teachers, students, families, and community working together at every level of education (Fraser, 2012). A collaborative approach to structuring children's learning experiences provides an alternative view of the image of the child, one where they learn through social relationships (Edwards, Gandini & Nimmo, 1994) |
| The Image of the Child: | In Reggio Emilia, children are viewed as capable, powerful, and resourceful and are seen as competent of highly complex ideas and active in their growth (Edwards, 2011; Wexler, 2004). A strong image of the child is one where their ideas are worth listening to, and their comments are seen as intelligent efforts to make sense of the world around them (Fyfe, 2011). |
| The Environment as the Third Teacher: | In Reggio settings, the Environment is seen as the third teacher in the room, next to the children and educators (Strong-Wilson & Ellis, 2007). The space is thoughtfully and intentionally arranged to spark children's interests (Strong-Wilson & Ellis, 2007) while remaining flexible and responsive to the children's needs (Gandini, 2011). |
| Relationships: | Relationships are the primary connecting dimension of the Reggio Emilia approach (Gandini, 2011) and include the physical relationships with the classroom, the social relationships between the people in the environment and the intellectual relationships which emerge through explorations (Fraser, 2012). |
| Transparency: | Transparency achieved in the Reggio environment through the transparent materials used in the learning space such as mirrors, windows and glass containers, which catch and reflect light throughout the classroom (Fraser, 2012). It can also be used metaphorically to explain the importance of children's work being displayed in the center's entrance ways and walls of the classroom, allowing their learning journey to be transparent to all who visit the center (Fraser, 2012). |

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|---|---|
| Documentation: | Documentation in the Reggio approach is described as "a verbal and visual trace of the children's experiences and work" (Fraser, 2012, p. 9). There needs to be enough detail recorded so that onlookers can understand the progression of the development that took place, looking past just the final product (Forman & Fyfe, 2011). |
| Pedagogical Documentation: | Pedagogical documentation emerges when Reggio educators study the documentation they created and use it to inform their practice and their teaching methods (Fraser, 2012). This is usually done in collaborative setting among all the educators through a process of making the students work "visible and subject to dialogue, interpretation, contestation, and transformation" (Dahlberg, 2011, p. 225). |
| Provocations: | A provocation in Reggio is used to spark, surprise and entice children to further explore the environment around them (Strong-Wilson & Ellis, 2007) and is defined as the moment an educator introduces a new element into the classroom (Turner & Wilson, 2009). Provocations can take many forms such as questions, variations on experiences, or the introduction of new materials and can come from both the teacher and the children (Turner & Wilson, 2009). |
| Progettazione: | Progettazione is the name for the Reggio Emilia curriculum, which emerges naturally through educator, student and environment interactions (Arseven, 2014). Progettazione is a flexible approach to learning which encourages the investigation of student's interests through the collaboration of the children, educators and the classroom environment (Fraser, 2012). |
| The Hundred Languages of Children: | The hundred languages of children is a pedagogical strategy for the construction of concepts and the consolidation of understanding and is viewed as a way of structuring knowledge and organising learning (Reggio Emilia Australia Information Exchange, 2021). The Hundred Languages are described as being expressive, communicative, symbolic, cognitive, ethical, metaphorical, logical, imaginative and relational (Reggio Emilia Australia Information Exchange, 2021). |
| Respect: | Respect is fundamental to the Reggio Emilia approach and is seen through the respectful atmosphere created by valued interactions among the children, families, educators and the environment (Fraser, 2012). The educators showcase respect through their ability to listen to the children, allowing them to recognize and value their accomplishments, no matter |

| | |
|---|---|
| | how small they may be (Hawkins, 2011). |
| Reciprocity: | Reciprocity is developed in the Reggio approach by building trusting relationships among all members of the community, by giving them opportunities to open up and share their ideas comfortably (Fraser, 2012). |

Chapter one provided an introduction and some context surrounding the research study. In the next chapter, I provide a review of literature which connects to the theories and concepts supporting the topics of toddler-aged children, their ideas about the world around them, and how their Educators support them in their explorations. The methodology used in this study is described in chapter three, discussing the methods used to collect and analyze the data. The fourth chapter looks at the research results and provides a discussion on the connections made. Conclusions and possible next steps are provided in chapter 5.

# Chapter 2: Review of the Literature

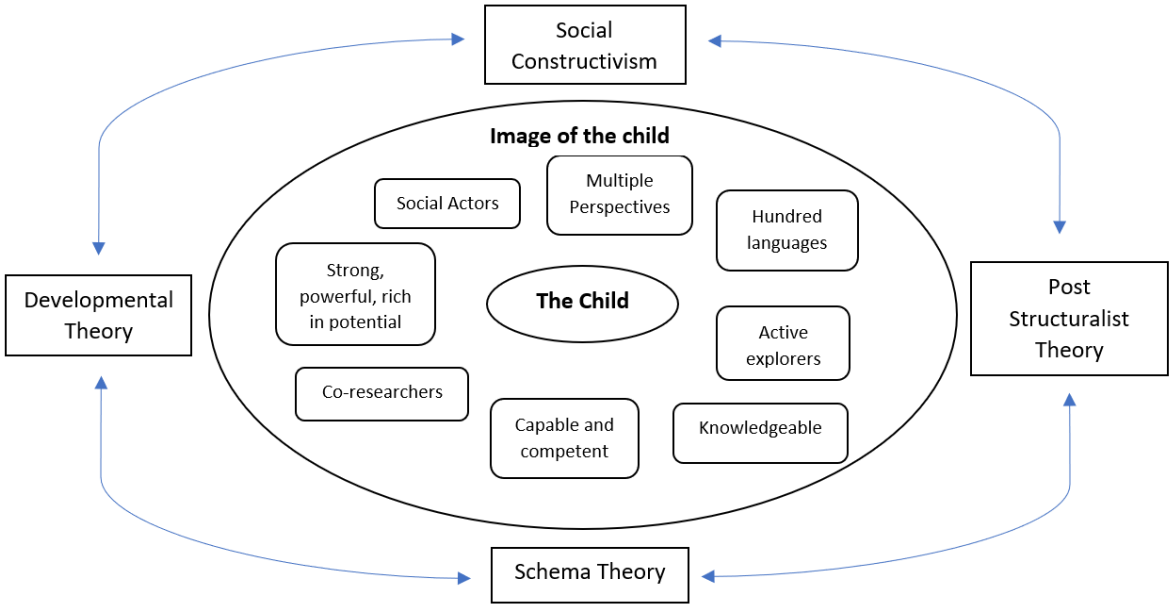
The literature review begins with an examination of the theoretical framework discussing post-structural theory, developmental theorists such as Vygotsky, Piaget, and Dewey, and then their connections to social constructivism followed by a discussion of schema theory and development in early childhood education. Following the theoretical framework is an analysis of the impacts of early childhood education followed by the history of early childhood education in Ontario and how the government has worked to re-imagine early years education and child-care to support the children and families it serves. An examination of the history, foundation, and fundamental principles of the Reggio Emilia approach to learning will follow along with Ontario's pedagogy for the early years, *How Does Learning Happen*? and relationship to ideas from the educational project of Reggio Emilia.

## Theoretical Framework

The theoretical framework of this study is built upon an image of the child who is capable and competent and believed to be strong, powerful, and rich in potential. The child is viewed as an active explorer who is knowledgeable and assumes the role of social actor, who has multiple perspectives, and who explores and makes sense of the world using the hundred languages. Three theories: social constructivism, developmental theory, and post-structural theory, contribute substantially to support a strong image of children. Below (see Figure 2.1) is a diagram which represents the theoretical framework that supports the foundation of my dissertation study.

**Figure 2.1**

*Visual of the Theoretical Framework of this Study*




## Social Constructivism

An educational learning theory threaded throughout this framework is social constructivism. Hein (1991) describes constructivism as the idea that learners, both individually and socially, construct knowledge for themselves. The concept of constructivism aligns with the social constructivist philosophy of the Reggio Emilia approach, where knowledge creation is seen as dynamic and socially constructed through relationships and communication (Hewett, 2001). Loris Malaguzzi, founder of the Reggio Emilia approach, adopted a social constructivist lens that was influenced by Piaget, Vygotsky, Dewey, Bruner, and other researchers in the field (Arseven, 2014). In the early days of the approach, Reggio educators were inspired by Piaget's view that the goal of teaching is to provide conditions for learning (Dahlberg & Moss, 2006). Lev Vygotsky was another source of inspiration and the Reggio educators looked to his idea of the zone of proximal development to support their approach of using small groups of children for

co-construction of the learning process (Dahlberg & Moss, 2006). Dewey's view of learning as an active process that is constructed through children's activities, experimentation, and participation, was another complementary source of influence to Reggio educators (Dahlberg & Moss, 2006). Bruner played a more personal role in the Reggio Emilia approach and was a frequent visitor to and admirer of the schools (Dahlberg & Moss, 2006). Piaget, Vygotsky, Dewey, and Bruner's developmental theories will be unpacked further in the subsequent sections to highlight the foundational work that Reggio is built upon and to generate an understanding of cognitive and social development in the early years while making connections and applications to constructivist theory.

It is important to note that although Reggio educators have taken inspiration from these theories, they have not been bound by them but rather use them to construct their own perspectives and pedagogies (Dahlberg & Moss, 2006). In an interview with Carlina Rinaldi, a Reggio Emilia pedagogue, theorist, and author, she expressed that "we have our own educational theories that are developed based on personal experience as well as constructed or acquired as part of our society and culture. Whether we are aware of it for not, we cannot live without theories" (Dahlberg & Moss, 2006, pp. 122-123). She then proceeds to describe how, along with the many theories in psychology and sociology, there are also many images of the child and of what childhood looks like. She explained that these theories "… tend to have one recurring aspect in common: the deterministic identification of the child as a weak subject, a person with needs rather than rights" (Dahlberg & Moss, 2006, p. 123). In contrast in Reggio theory, the image of the child is one where the child is seen as "strong, powerful, and rich in potential and resources, right from the moment of birth" (Dahlberg & Moss, 2006, p. 123).

## Developmental Theorists

**Piaget.** Piaget (1964) proposed that children go through four stages of cognitive development: sensorimotor, preoperational, concrete operational, and formal operational. Toddlers (18-months – 2.5 years), which reflect the age group of the participants in this research study, fall into both the sensorimotor and preoperational stages. In the sensorimotor stage, children develop the foundational practical knowledge upon which later representational knowledge will be built (Piaget, 1964). It is the preoperational stage where children start to use the beginnings of language and symbolic function, leading to the development of complex thought and representation (Piaget, 1964). Development in the preoperational stage builds on the foundation created in the sensorimotor stage of development (Piaget, 1964).

Although Piaget's theory of cognitive development is the most complete theory to date, the validity and accuracy of the theory has been questioned for a number of reasons, some of which include the generalizability of the theory across cultures and whether all adults eventually reach the formal operational stage of development (Sternberg & Williams, 2010). Neo-Piagetian theorists build on the strengths of his theory while rejecting the weaker parts (Sternberg & Williams, 2010). Neo-Piagetian theorists suggest that there are more than just the four stages and seek to better understand optimal and typical levels of development beyond the formal operations stage (Sternberg & Williams, 2010). Piaget's theories surface in the Reggio philosophy using active learning through hands-on experiences and by encouraging children to be engaged with resources while exploring their ideas about the world around them (İnan, Kantor, & Trundle, 2010). Reggio educators were inspired by Piaget's epistemology and view of teaching to provide conditions for learning, however they also became aware of weaknesses in his theory and examined it more critically, because it decontextualizes and isolates the child by

looking at them in isolation (Dalhberg & Moss, 2006). When Reggio educators found a gap in Piaget's theory, they turned to the work of Lev Vygotsky (Dahlberg & Moss, 2006)

**Vygotsky.** Vygotsky's theory of cognitive development is not stage-related, but rather considers development on a continuum. Vygotsky (1994) proposed that the true direction of the development of thinking starts at a social level and moves to an individual level of thinking. Vygotsky's work is embedded in sociocultural theory where children internalize knowledge and social skills from the setting in which they interact (Sternberg & Williams, 2010). Internalization is seen when a child recreates within themselves an interaction they participated in or observed in the social world to benefit or learn from the interaction. In Vygotskian thinking, a child is born into a world with shared language and concepts, and it is through engagement with their world that the child will attune to the cultural signs to which they are exposed daily (Stone, 2012).

A major concept in Vygotsky's theory of cognitive development is the *zone of proximal development* which is the difference between a child's individual level of performance versus the level they can reach when scaffolded by an expert or more knowledgeable other (Vygotsky, 1994). Vygotsky's zone of proximal development aligns with the Reggio Emilia strategy of *co-construction* by encouraging children to interact in a group with both adults and their peers (Dahlberg & Moss, 2006). The zone of proximal development varies from child to child, making it important for educators to understand each child as a unique individual with their own set of abilities and potential (Stone, 2012). The child's true potential emerges and further develops when they interact with adults or more capable peers, pushing the borders of their zones of development (Stone, 2012). It is the role of a Reggio educator to be able to observe the child and recognize their zone of proximal development, identifying where there is a gap in understanding (Gandini, 2011). Reggio educators are also invested in Vygotsky's ideas surrounding the

importance of the relationship between thought and language, as well as how action is facilitated by cultural tools and symbols (Dahlberg & Moss, 2006). A Vygotskyian theory that guides Reggio educators is how thought and language operate together to form ideas. From this formation comes a plan for action and execution, followed by describing and discussing the action (Gandini, 2011).

**Dewey.** Dewey's theory about social learning suggests that classrooms should be representative of real-life situations and children should be given the opportunity to learn in social settings where they participate in hands-on learning activities (Williams, 2017). Dewey (1938) argued that traditional classrooms, where the educator is seen as the keeper of knowledge, were not developmentally appropriate and suggested that curriculum should be driven by student interest. In Social Learning Theory, it is important that children can think for themselves (Dewey, 1938). In learner-centered classrooms inspired by Dewey's Social Learning Theory, children are observed learning-by-doing while engaging in problem solving together as a community (Williams, 2017). Reggio educators were deeply influenced by Dewey's theories and his view that learning is an active process, and that knowledge is constructed through children's activities (Dahlberg & Moss, 2006). Active learning is seen in Reggio classrooms through the way the educators provoke the children to spark their attention and then support their hands-on learning as they engage with the provided materials.

**Bruner.** In the early days of his career, Bruner was interested in the concept of culture and how culture shapes the mind (Takaya, 2008). Bruner (2004) describes how language and culture form and shape the mind outside of individual encounters with the world. He postulates that one cannot simply learn in a neutral context and that learning is always situated in and related to the surrounding environment (Bruner, 2004). Reggio educators are influenced by

Bruner because of the importance he places on the relationship between teaching and learning and their interconnectedness (Gandini & Kaminsky, 2006). When discussing the Reggio approach, Bruner (2000) describes that it is not a blueprint, but rather an inspiration to be authentic and build an individualized experience from it. Reggio philosophies are deeply rooted and situated in Italian culture. When thinking about Reggio inspired practice outside of Italy, the culture of the early learning setting needs to be taken into consideration. For example, Edwards, Gandini and Forman (2011) discuss the increasing popularity of international interest in the Reggio Emilia approach, which increases the complexity of questions being asked and conversations being had about the approach. They describe that educational innovations can not be transplanted from one country to another without deep translation and adaption (Edwards, Gandini, & Forman, 2011). This type of translation and adaption happens through "cultural diffusion", where educational concepts and practices can radiate and spread across the cultural barriers (Edwards, Gandini, & Forman, 2011). Through deep translation of approaches, and the willingness of educators to adapt, Reggio inspired practice can support North American educators to provide rich early learning environments which build on the important parts of their culture and the community they serve.

**Post Structural Theory**

Early years researchers and educators are drawn to post structural thinking because of its fluid nature in thinking and bring post structural theory into the classroom by using a critical lens to reflect on their practice (MacNaughton, 2005). Post structural theory seeks to disrupt what is known to be "normal" or "true" and looks at knowledge and reality as ever-changing and uncertain (Mukherji & Albon, 2018). Within these multiple ways of viewing reality, post-structuralist theory, when applied to research, relies on the position from which one is looking

when seeking a perspective of reality (Mukherji & Albon, 2018). Poststructuralist research is interested in shifting the notion of power in relation to knowledge and works to deconstruct dominant discourses by looking past what is seen as "normal" and instead looks for alternative ways of thinking (Mukherji & Albon, 2018).

Foucault (1987) challenged the notion of power dynamics and proposed a new way of conceptualizing the idea of power. He theorized that there is a whole network of power relationships that extend into many areas of human relations. Furthermore, he explained that in some instances, power is in a state of domination by one social group, where instead of being variable and allowing the alteration of power, social groups can render power unchangeable and block the movement of power (MacNaughton, 2005). Foucault (1987) describes that knowledge is inextricably linked with power and that people internalize these discourses of knowledge and power, making them socially acceptable. MacNaughton (2005) connects Foucault's theories including poststructuralist thinking and early childhood education in her book titled *Doing Foucault in Early Childhood Studies.* She argues that although it is hard to find Foucault's ideas of disciplinary power, docile bodies, and power/knowledge in mainstream early childhood texts, there is a deep connection between Foucault's thinking on knowledge, truth, and power and the connections of those ideas in the relationships created in the early childhood institutions. This happens through deep critical reflection and requires Educator's to rethink their understanding of knowledge and power in connection to their pedagogy (MacNaughton, 2005). When early childhood educators post-structurally reflect on their thinking and understanding of power and knowledge in the early years, they deepen their understanding of equity and the possibilities of activism in their work (MacNaughton, 2005).

In more recent work, Kuby and Rucker (2016) connect poststructuralist theory to their work in multimodal literacy and their explorations of the connections of materials, time, and space within their classroom. Multimodality has emerged in response to the changing social and semiotic landscape of the 21st century (Jewitt, 2008). The term "modes" in multimodal refers to the resources used for meaning making and when accompanied with the term "multi" to form multimodal is defined as the way individuals make meaning using different kinds of modes (Rowsell & Walsh, 2011). From a multimodal perspective, meaning making is made through the situated configurations of modes such as image, gesture, gaze, body posture, sound, writing, music, speech, image, action etc. (Jewitt, 2008). These concepts connect to this dissertation and the dimensionality of the hundred languages of children because they highlight the fluid nature of how time, space, and materials interact in multiple ways in an early learning setting. Kuby and Rucker explain that post structural theories allow them to "focus on humans and nonhumans as active agents in producing realities, knowledges, literacies, and ways of becoming together in the world" (p. 26). Jewitt (2008) takes a post structural stance when describing the importance of multimodality and literacy in the landscape of the 21st century and argues that it is no longer possible to think about literacy solely as a linguistic accomplishment. For example, he describes that literacy can not be seen in isolation, but rather its connection to social, technological, and environmental factors needs to be taken into consideration. He stresses that it is important for educators to provide a variety of representations of materials in the learning environment for students to manipulate during their interactions in the classroom (Jewitt, 2008).

Threads of Paulo Freire, a Christian socialist, and his philosophies also work their way into the theoretical framework of this study. Freire opposed the conventional model of education, where the children play a passive role in their learning, because it reinforced conventional power

relations between the educators and their students (Freire, 1982). Freire argued that the relationship between an educator and his/her students should be reciprocal, moving away from the separation of the teacher and student roles. In a letter written to educators, Freire (1993) explained that in the teaching and learning process, both the educator and students are in a position of learning. He explained that the one who teaches also learns because one is constantly in a position of re-thinking and re-examining their approaches to best suit the children--a process completed by building on previous knowledge to help uncover uncertainties and misunderstandings the children may have (Freire, 1993). The reciprocal relationship encouraged by Freire works to eliminate the power dynamic between the children and the adults in the classroom by having them take the learning journey together.

**Schema Theory in Early Learning**

The concept of schemas and understanding the theory behind schema development is viewed as a key responsibility for early learning practitioners as it is an important part of children's growth and learning (Louis, Beswick & Featherstone, 2013). Chris Athey (1990) defines a schema as a pattern of repeated behaviour where experiences are assimilated and gradually co-ordinated, consequently leading to a higher and more powerful schema. Athey was the first teacher and researcher to observe schemas in an early learning setting, however their practices were deeply rooted in theories from Freidrich Froebel, John Piaget, and Lev Vygotsky (Louis, Beswick & Featherstone, 2013). Athey conducted a 5-year long research study, *The Frobel Early Education Project*, analyzing more than five thousand observations of children aged two to five years old which was aimed to search for schemas and was designed to follow the development of children's thinking and how young children acquire knowledge (Athey 1990; Louis, Beswick & Featherstone, 2013). Athey's study (1990) identified and described graphic

schemas, space schemas and dynamic schemas stemming out of their observations of young children in a Froebel Institute Kindergarten by analysing children's drawings and interactions in the setting.

Tina Bruce (2019), who worked in connection with Chris Athey and the Frobel Early Education Project, describes three levels in which schemas operate and develop:

- Sensorimotor (learning through the senses and movement)
- Symbolic representation (learning through pretend play)
- Functional dependency (exploring cause and affect)

Bruce (2019) advocates that children need to be given opportunities to explore all three levels of schemas to grow and maintain their schema development. Bruce, in connection with their research assistant Pat Gura, directed the Frobel Block Play Project which looked at supporting children's play and schema development with carefully planned materials which provide opportunities to collaborate, negotiate, problem solve and co-operate with their peers and educators (Louis, Beswick & Featherstone, 2013). The block play project uncovered the following eight examples of how children can use and manipulate blocks to enhance their existing schema development: horizontal lines, simple verticals, round and linear enclosures, edge ordering and filling in, intersections and partitions, grids, central core with radicals, arches, and zigzags (Louis, Beswick & Featherstone, 2013)

Cathy Nutbrown (2011), building from the work of the Piaget, Vygotsky, Athey and Bruce, linked schema development to children's talk, actions, representation, and thinking. Nutbrown (2011) connected early schema development in babies, to the patterns of behaviour seen in children ages two to five years old. This connection, and the patterns of behaviours observed,

then become the child's established foundation for learning (Nutbrown, 2011). Nutbrown (2011) discusses the importance of three constants in effective early childhood education: adults and their behaviour, routines and information, and experiences and materials. Children under five years of age need consistency in the adults who are a part of their everyday lives, and they need adults that know and understand their needs (Nutbrown, 2011). Children need to be able to predict how adults will react in different situations since this will support their ability to take risks and try new things because they are better able to predict how the adult will respond (Nutbrown, 2011). The second constant in effective early childhood education is routines and information, which supports the idea that children need to feel comfortable in their surroundings to operate with confidence and independence (Nutbrown, 2011). It is the adult's role to ensure the children know what is happening by developing daily routines and consistent schedules based on the children's needs (Nutbrown, 2011). The third, and final constant, is experiences and materials, which supports the idea that there needs to be some consistency in the environments and daily materials provided for the children (Nutbrown, 2011). Children are better able to engage in deep thinking and learning when they can locate what they need and when they know who to ask for support (Nutbrown, 2011).

Curtis and Jaboneta (2019) discuss schema play in young children and its connection to healthy brain development. They describe that when children follow their natural tendencies to engage in repetitive play, such as schema play, they are working towards growing and reinforcing neural pathways in their brain (Curtis & Jaboneta, 2019). It is through this process of growing and reinforcing, that neuro pathways become permanent which in turn supports children in developing new understandings (Curtis & Jaboneta, 2019). When educators observe schema

play closely, they are better able to plan experiences to support children in growing and reinforcing their understandings (Curtis & Jaboneta, 2019).

**Impacts of Early Childhood Education**

The National Association for the Education of Young Children (NAEYC) (2022) reinforces the belief that all children have the right to high-quality, equitable early learning opportunities. When children can engage in nurturing, high-quality early learning experiences, they develop a sense of joy and enthusiasm when interacting with the world (Essa & Burnham, 2019). This joy and enthusiasm is important in the early years of learning because the amount of learning that takes place during this time is unparalleled compared to later learning (Essa & Burnham, 2019). Subsequently, Essa and Burnham (2019) describe that the consequence of children not being provided nurturing and stimulating environments is that they can lose a sense of enjoyment and enthusiasm towards learning. The quality of an early learning environment is directly linked to positive learning outcomes as well as enhanced learning and development for the children in the space (Evans, 2006). The physical aspects that are important to the quality of the space include: room size, classroom layout, furniture, lighting, and noise (Evans, 2006). Berris and Miller (2011) describe the social elements important to a quality learning environment, they include: the space is rich in stimuli, offers opportunity for exploration, play as a vehicle for learning, and the development of social skills through peer interaction. A well-designed physical and social early learning environment will meet the needs of all children simultaneously (Hewes, 2006).

Haslip and Gullo (2018) describe early childhood education as a dynamic international field, where a global trend has emerged in support of a deeper commitment to early care and development. They describe to achieve this in our ever-changing landscape there needs to be:

> Increased funding for public preschool, more rigorous research in support of high-quality early care and education, and systems-thinking to protect holistic child development, where family and community well-being are recognized as inseparable. Promising interdisciplinary empirical frameworks for inquiry and practice such as human ecology facilitate the type of openminded investigation that is needed to build and improve support networks for children, families and communities and inform related policymaking (p. 15).

Melhuish (2014) discusses the impact of early childhood education on the overall wellbeing of a community, especially for children from disadvantaged backgrounds. He argues that the universal provision of high-quality early education and care, which is affordable and accessible to all children, is critical to a child's "future competence, coping skills, health, success in the labour market, and consequently the social and economic health of the nation" (p. 40). To expand further, Melhuish (2014) asserts the most effective time to improve the lives of disadvantages children is in the first 5 years of life, when their brain development and learning capabilities are being formed. The positive impacts of quality early learning opportunities reach not only the individual child, but their families, communities, and the population. The best approach moving forward is to support high-quality childcare, which is affordable, accessible and inclusive.

**Early Childhood Education in Ontario**

Over the past two decades, the Ontario government worked to re-imagine child-care in Ontario through the implementation of early learning programs, legislation, and initiatives to support young children and their families (Ontario Ministry of Education, 2012). The aim to re-

imagine child-care in Ontario stemmed from a system that had not seen a fundamental change since the 1980s and was an attempt to better reflect the realities of the modern world (Ontario Ministry of Education, 2021). The proceeding section documents some of the major changes that have been made in Ontario to support the re-imagining of early childhood education and care. The first component of Ontario's re-imagining of early child-care that will be discussed is the implementation of the College of Early Childhood Educators, a regulatory body that oversees the early childhood education profession to ensure a high standard of practice and care (College of Early Childhood Educators, 2017). The implementation frameworks in child-care, including *The Child Care and Early Years Act* (2014), *Early Learning for Every Child Today* (ELECT; 2007), and *the How Does Learning Happen? Pedagogy for the Early Years* (2014) will also be discussed. Finally, the section ends with a brief overview and analysis of the *Early Years Study 4* (2020), including the findings in the most recent publication (McCain, 2020).

**Ontario College of Early Childhood Educators**

The role of the College of Early Childhood Educators in Ontario is to govern and regulate Ontario's Registered early childhood educators (RECEs) and work to serve and protect the public interest (College of Early Childhood Educators, 2020). The College protects the public's interest by holding RECEs accountable to ethical and professional standards and continuous learning (College of Early Childhood Educators, 2020). The College ensures accountability through a complaints and discipline process which investigates professional misconduct, incompetence, and incapacity while working in the early years (College of Early Childhood Educators, 2020). After more than 20 years of petitioning for legislative recognition from organizations working in the early years, the Ontario government finally passed the *Early Childhood Educators Act* (the ECE Act), in May 2007, establishing the College of Early

Childhood Educators (College of Early Childhood Educators, 2020). The Early Childhood Education Act included four criteria outlining the role of the College in Ontario (College of Early Childhood Educators, 2020). The four criteria outlined in the Act include (College of Early Childhood Educators, 2020, History of the college section):

- a definition of what constitutes the practice of the profession.
- a requirement for persons to be members to practice the profession.
- title protection authorizing only members of the College to use the titles "early childhood educator" or "registered early childhood educator" or an abbreviation.
- roles and responsibilities of the Registrar along with the Registration Appeals, Complaints, Discipline and Fitness to Practise Committees. (para. 2)

The College of Early Childhood Educators came into existence in February 2009, when the Act was proclaimed (College of Early Childhood Educators, 2020). Currently, the College has over 57,000 members in good standing and is the only professional self-regulatory body for early childhood education in Canada (College of Early Childhood Educators, 2020). The implementation of the College shows a strong vision for leadership and provides a unique kind of professional support that few organizations offer (Winick, 2013).

The practice of early childhood education as defined by the ECE Act is as follows (College of Early Childhood Educators, 2017):

> The planning and delivery of inclusive play-based learning and care programs for children in order to promote the well-being and holistic development of children, and

> includes, (a) the delivery of programs to children 12 years or younger; (b) the assessment of the programs and of the progress of children in the programs; (c) communication with parents or persons with legal custody of the children in the programs in order to improve the development of the children; and (d) such other services or activities as may be prescribed by the regulations. (p. 3)

When working in Ontario as an early childhood educator with an early childhood education diploma, it is mandatory that one is registered with the College of Early Childhood Educators to receive the RECE (registered early childhood educator) designation. The role of the College is to work in the public's interest to establish and maintain the following (College of Early Childhood Educators, 2017):

- registration requirements
- ethical and professional standards for RECEs
- requirements for continuous professional learning
- a complaints and discipline process for professional misconduct or incompetence
- a fitness to practice process for issues of incapacity (p. 3).

The ethical and professional standards the College sets out for RECEs help to guide their practice by outlining professional knowledge, skills, values, and expectations and should guide them in providing high quality early learning opportunities for the children in their care, regardless of their role in the early years (College of Early Childhood Education, 2017).

**Child Care and Early Years Act 2014**

The Child Care and Early Years Act, 2014 (CCEYA) came into effect in August 2015 and replaced the nearly 70-year-old *Day Nurseries Act* (Government of Ontario, 2020). The CCEYA supports a vision of high-quality experiences and positive outcomes for children across Ontario's early years and child-care systems (Government of Ontario, 2020). The CCEYA was highly anticipated by the early years community and has helped to re-imagine the early years in Ontario by establishing new rules for child-care regarding licensing standards and child-care funding (Government of Ontario, 2020). More specifically, the CCEYA works to meet the changing needs of Ontario families and to re-imagine child-care through the following criteria tools (Government of Ontario, 2020):

- setting system-wide provincial goals
- clarifying rules on which programs required a child-care licence to operate
- setting requirements for licensed home-based child-care and unlicensed child-care
- identifying the roles of the province and local service system managers
- creating new enforcement and compliance. (para. 3)

The CCEYA applies to licenced child-care centers and home child-care agencies, unlicensed child-care, and home child-care providers contracted by a licenced agency (Government of Ontario, 2020). Since its establishment in 2014, the Ministry of Education has worked to keep the Act current and reflective of the needs of the system through legislative and regulatory changes (Government of Ontario, 2020). Some of the changes include increased affordability and access to child-care, and more specifically in relation to the COVID-19 pandemic such as

providing provincially funded emergency child-care to front line workers (Government of Ontario, 2020).

Within the Act, it states that the Ministry of Education is required to review the new legislation within five years of its existence and to ensure the report is available to the public (Government of Ontario, 2020). This review started July 7th, 2020 to encourage feedback from Ontario families, educators, and staff of early years organizations. The Ministry of Education created two online surveys to gather their perspectives (Government of Ontario, 2020). Main findings of public feedback reveal challenges in accessing child-care, high costs of care, the need for more flexibility with ratios and age groupings, the importance of program locations and hours of operations for families balancing work and family responsibilities, and more support for children with social needs (Government of Ontario, 2020). In response to the CCEYA 5-year review and the public feedback, the Ministry has identified the following six commitments (Government of Ontario, 2020):

- support quality in child-care and early years settings
- create flexible options for families and providers
- update staffing qualifications to support workforce retention
- clarify requirements for inclusion of children with special needs
- support Indigenous-led and culturally relevant programming
- reduce administrative burden and address technical issues and gaps (para. 2).

These six commitments are the next steps to support quality child-care in Ontario and showcase a system that works to meet the ever-changing needs of the people in its care.

**Early Learning for Every Child Today (ELECT)**

The Early Learning for Every Child Today (ELECT) is foundational to early learning programs in Ontario and recognizes the importance of the holistic development of the whole child through awareness of each developmental domain (Ontario Ministry of Education, 2014). To provide children with opportunities that are appropriate to their cognitive development, early childhood educators reference the ELECT document (Best Start Expert Panel on Early Learning, 2007) to guide their practice.

ELECT provides principles and understandings of children's development in the early years (birth to eight-years-old) and emerged from the work of the Best Start Panel on Early Learning, a group of professionals from both early childhood education and formal education sectors in Ontario (Best Start Panel on Early Learning, 2007). The individuals on the Best Start Panel were invited to share their expertise by the Minister of Children and Youth Services. "Early Learning for Every Child Today is based on an extensive review of early childhood curriculum and pedagogy in Canada and internationally, research findings, and the collective professional expertise of the panel members" (p. 1). It was through the collective views and experiences of the individuals Best Start Panel that the ELECT document was established.

The ELECT document describes a continuum of development that explores the progression of children's development from infants to toddlers, to preschool-kindergarten aged children, and finishes with school-aged children (Best Start Panel on Early Learning, 2007). Although the continuum of development is divided into age groups, there is an overlap in the age ranges because it is not rigid, but rather is a sequence of steps along developmental trajectories that are typical for most children (Best Start Panel on Early Learning, 2007). The continuum is

grounded in child development and its primary purpose is to provide information for early childhood practitioners to plan meaningful curriculum. Within the cognition section of the continuum of development for toddler-aged children (14 months to 3 years-old), the following nine domains/skills are outlined: self-regulation and attention regulation, problem solving, cause-and-effect explorations, spatial explorations, spatial problem solving, temporal, symbolic thought (representation and root skills of literacy, pretend play, representation), memory, and sorting (Best Start Panel on Early Learning, 2007). These domains/skills are necessary to consider when researching with children because they offer suggestions on how researchers can support cognitive developmental opportunities while including children in research.

Within each of the nine domains/skills listed above there are suggested indicators of the skill a typically developing children within the toddler frame of development may demonstrate as well as suggested interactions early childhood practitioners can have with the children (Best Start Panel on Early Learning, 2007). These indicators and interactions helped to guide my observations. A toddler in the problem-solving domain can set goals and act to achieve them, solve problems using trial and error, use objects as tools to solve problems, and seek out adults to help meet goals (Best Start Panel on Early Learning, 2007). Children in the emotional domain can maintain attention regulation for increasing periods of time and ignore distracting variables. In the memory domain, children have an increased memory capacity (Best Start Panel on Early Learning, 2007). Within the symbolic thought, representation, and root skills domain, the document highlights that toddler-aged children can identify objects in photos and books, as well as point to objects in books on request (Best Start Panel on Early Learning, 2007). Finally, in the sorting domain, the interactions column suggests “open-ended questions allow the toddler to give a personally meaningful response, and when he can respond with actions, it allows him to

communicate his thinking even when he may not use his expressive language" (Best Start Panel on Early Learning, 2007, p. 34). The sorting domain connects to the Reggio pedagogical strategy of the hundred languages of children because it supports the notion that children can communicate in ways, such as using actions, gestures, posture etc., other than just using expressive language.

The ELECT document is considered in Ontario as a foundational document in the early years sector. The document looks at understanding children through a continuum of development, where the six guiding principles of the approach are viewed as separate elements. Through new understandings of pedagogy and an on-going practice of critical reflection, a new approach to looking at how learning happens has surfaced (Ontario Ministry of Education, 2014). Moving away from a continuum of development which separates children by ages and stages, Ontario's new pedagogy for the early years looks at goals for all children and expectations for programs (Ontario Ministry of Education, 2014). The supplementary pedagogy document is important to this research study because it looks at the holistic child, outside of a specific age or stage, and will support a more inclusive observational approach of all the children in the study.

**How Does Learning Happen? A Pedagogy for the Early Years.**

*How Does Learning Happen*? (HDLH) (Ontario Ministry of Education, 2014) was developed in 2014 to complement the ELECT document (Best Start Panel on Early Learning, 2007) and to further expand upon child development by considering the context in which children learn and how they make sense of the world around them. HDLH is grounded in new research and worldwide practice on children, pedagogy, and the role of educators in the early

years (Ontario Ministry of Education, 2014). The document explains that the traditional domains (cognitive, social, emotional, physical, and communication/language/literacy) do not provide a whole picture of child development and it is important to consider other areas such as creative, aesthetic, and spiritual dimensions of experience (Ontario Ministry of Education, 2014). Looking outside traditional domains may prompt a rethinking of theories and practices or require a shift in mindset and habits when considering the interactions one may have with children and how the adult might plan and prepare learning opportunities (Ontario Ministry of Education, 2014). Educators can deepen children's learning and experiences when they listen to children and expand their knowledge on the complexity and uniqueness of each child in their care. Early learning practitioners can ask themselves some of the following questions when developing a more complex view on child development (Ontario Ministry of Education, 2014):

- What are the unique strengths and needs, approaches, attitudes, and dispositions of each child?
- How does a child's relationships, families, home environments, and the cultural context in which the child lives influence their development and learning?
- What motivates a child's actions? What is meaningful to them? What brings a child joy?
- What can be done to extend and deepen children's learning?
- What do I know about each child's unique spirit and character? These same questions can be applied to families (p. 18).

Educators can use the concepts presented in *How Does Learning Happen?* to better understand each individual child's unique development and thus aid in developing cognitively appropriate ways for children to express their understandings.

*The How Does Learning Happen?* document reflects Ontario's vision for the early years, providing children with responsive, accessible, high quality early childhood education (Ontario Ministry of Education, 2014). The *HDLH* document was created as a resource guide for early learning professionals, and it supports an evolving understanding of children, pedagogy of the early years, and the role of the educator. The document is for early learning educators who work with children from birth to 8-years-old in various early learning settings. The *HDLH* document sets out a pedagogy for the early years and is used as a conceptual framework to support educators in providing rich learning experiences for the children in their care (Ontario Ministry of Education, 2014). Included are four foundations for learning which set out goals for the children and expectations for the programs. Figure 2.2, below, is an image taken from the HDLH document which summarizes the four foundations, goals, and program expectations embedded within the framework (Ontario Ministry of Education, 2014, pg. 23):

**Figure 2.2**

*How Does Learning Happen? (2014) Four foundations, goals, and expectations.*

| FOUNDATIONS | GOALS FOR CHILDREN | EXPECTATIONS FOR PROGRAMS |
|---|---|---|
| Belonging | Every child has a sense of belonging when he or she is connected to others and contributes to their world. | Early childhood programs cultivate authentic, caring relationships and connections to create a sense of belonging among and between children, adults, and the world around them. |
| Well-Being | Every child is developing a sense of self, health, and well-being. | Early childhood programs nurture children's healthy development and support their growing sense of self. |
| Engagement | Every child is an active and engaged learner who explores the world with body, mind, and senses. | Early childhood programs provide environments and experiences to engage children in active, creative, and meaningful exploration, play, and inquiry. |
| Expression | Every child is a capable communicator who expresses himself or herself in many ways. | Early childhood programs foster communication and expression in all forms. |

The importance of the four foundations lies in their interconnectedness and how the foundations work together in supporting the holistic development of young children (Ontario Ministry of Education, 2014). The creation of the *How Does Learning Happen?* document is one more

example of Ontario's re-imagining of the early learning sector with an aim to support quality early learning opportunities for the youngest learners.

**Early Years Study 4**

The *Early Years Study 4* (2020) (EYS4) is the fourth of a series of reports, informed by Canada's leading scientists, policy researchers, public administrators, and early childhood educators, and outlines the impact of early experiences on lifelong learning. The *Early Years Studies 1, 2,* and *3* (1999, 2007, 2011) have informed policy in the early years, by building a bridge between communities and policy makers, through documenting the benefits of early education. Some of the major benefits supported in the first three reports are summarized and outlined below (McCain, 2020):

- offering opportunities for all children
- lifting children and their families out of poverty and social exclusion
- reconciling work and family life
- fostering female labour force participation and gender equity
- developing a more literate and skilled workforce
- cultivating a pluralistic, democratic society. (p. 2)

The *Early Years Study 4 (2020)* calls upon the government to further recognize preschool-aged children by offering early education to this age-group as a first tier of education that is just as important as the educational journey that follows. The *EYS4* showcases the need for early childhood education for all, moving from the notions of childcare as "a place where kids go while mom works" (McCain, 2020, p.2) to one where children attend preschool as their first

educational experience. The *EYS4* is broken down into six chapters which focus on current research in the field of early childhood education.

The proceeding information highlights the main points discussed in each chapter of the report (McCain, 2020). Chapter 1 discusses children during the period of 2-5 years of age as a unique time for learning and reveals how the development of the preschool child's brain builds on the foundations for lifelong learning. Chapter 2 discusses play with a purpose and expands on the idea that preschool play offers learning opportunities that will benefit children throughout their lives. Chapter 3 expresses how quality early childhood education is beneficial to all involved by helping children, their families, and communities to thrive. Chapter 4 is an overview of early childhood education and public policy and discusses how families benefit from initiatives that are aimed to support early education. Chapter 5 suggests that Canada needs to rethink the early childhood education approaches currently being used and suggests the implementation of universal early childhood education to support quality and access in the early years. The final chapter summarizes the information presented in the report and discusses next steps on how Canada can do better in early childhood education. The *EYS4* concludes with research from Indigenous scholar Dr. Angela James on becoming a capable child and discusses the bridging of Western and Indigenous early learning curricula to support Indigenous children who benefit from culturally responsive early learning. The Early Years Studies are working to strengthen early childhood education for its youngest learners through supporting high-quality approaches, much like the Reggio Emilia approach in Italy. A comparison between Ontario's pedagogy for the early years and the Reggio Emilia approach to early learning can be found at the end of this chapter.

**The Reggio Emilia Approach**

The Reggio Emilia approach was developed in a small town in Northern Italy and has developed its own set of philosophical and pedagogical assumptions over the past 50 years (Edwards, Gandini, & Forman, 2011). Reggio Emilia is a town in the richest and most developed area of, Northern Italy. With the support of Loris Malaguzzi and families living in the area, the Reggio approach was developed post World War II and has been described today as "the gold standard" in early childhood education (Arseven, 2014). The foundation of the approach is built upon four intellectual traditions, described by Edwards, Gandini, and Forman (2011) as:

- European and American strands of progressive education
- Piagetian constructivist and Vygotskian sociohistorical psychologies
- Italian postwar left-reform politics and
- European postmodern philosophy. (p. 8)

These four strands are blended within the approach with elements originating from past and present Italian history and culture (Edwards, Gandini, & Forman, 2011). The authors describe that the elements emerge from the region's tradition of participatory democracy and citizens alliances for solidarity and cooperation. In connection to the Reggio Emilia approach, the child is understood to have rights to civility, civilization, and civic conscience among the educators (Edwards, Gandini, & Forman, 2011). These notions connect to the Canadian Charter of Rights and Freedoms, developed in 1982, which protects the basic rights and freedoms of all Canadians, including children (Canadian Charter of Rights and Freedoms, 1982). The Canadian Charter of Rights and Freedoms protects a child's fundamental freedom to peaceful assembly among other

aspects such as the freedom of belief, opinion, and expression (Canadian Charter of Rights and Freedoms, 1982).

In the 20th century, as Italy became industrialized and as the needs of working women and the care and education of children became important in the communities, Maria Montessori opened her first school, Children's House, in Rome, Italy (Edwards, Gandini, & Forman, 2011). Similarly, following WW2 and years under fascism, the people of Italy were ready for a change, and this is when communities in Reggio Emilia, Italy, took the care and education of their youngest members into their own hands and built parent-run schools (Edwards, Gandini, & Forman, 2011). At this time, Reggio educators were influenced by the work of Maria Montessori and viewed her as a mother figure. To go beyond her work, and create a vison of their own, they needed to become independent of their mother (Dahlberg & Moss, 2006). Becoming independent was an important turning point for the Reggio Emilia approach because in the period after the second world war, the national government was undergoing reorganization and localities took it in their own hands to start parent-run schools based on local initiative and local traditions (Edwards, Gandini, & Forman, 2011). Loris Malaguzzi teamed up with the people of Reggio Emilia to form the foundation of the Reggio Emilia approach to support the approach in becoming independent of the Montessori style of early learning (Fraser, 2012). Loris Malaguzzi, the founder, tells a story about a group of parents who came together to build the schools and how they sold abandoned tanks, trucks, and horses left by the Germans after the war to help raise money for the development (Gandini, 2011).

Malaguzzi emphasized a strong image of children who are curious and intelligent from birth and takes on a "relation-based education approach" where children are seen in relation to others, peers, family, society, and environment (Arseven, 2014). As defined by Rinaldi (2003),

curriculum in each Reggio classroom is decided through dialogue among children, educators, and the environment and can develop from suggestions from the student, educator, natural incidents, the news, or interest areas of the children. Group learning is highly valued in the Reggio approach and much emphasis is put on team documents and group projects (Arseven, 2014). *Progettazione*, a term used for curriculum, is based on both a project approach as well as small group learning (Arseven, 2014). Reggio curriculum is shaped based on time, place, and results of the *work* (learning opportunities undertaken). It is important to note that Reggio schools are not structured around a formal curriculum or framework, like the programs in Ontario early learning settings which state what must be taught or how to guide learning (Arseven, 2014). Subjects and things to be learned are decided together by teachers, peers, and children. The purpose of projects is for children to find answers to their theories about the world around them and to give them the opportunity to enhance their abilities, responsibilities, and decision making all while exploring their interests (Arseven, 2014). Malaguzzi describes the Reggio Emilia curriculum as a "curriculum *from* children instead of a curriculum *for* children" (Arseven, 2014, p. 169; emphasis added). A child is a constructor of knowledge, a researcher, and a social entity whose thoughts should be taken into consideration and respected (Arseven, 2014). John Dewey's idea of "thinking is researching" supports the image of children as researchers within Reggio Emilia, researching what they see by making inferences, then conducting experiments, and finally, making discoveries (Arseven, 2014). Teachers are also seen as learners in the Reggio Emilia approach. They learn alongside the children by creating spaces that support their development and allow them the opportunity to explore and solve problems (Arseven, 2014).

## Principles of the Reggio Emilia Approach

The Reggio approach has a set of key education principles that guide and encourage educators, children, and their families. These principles are reflective elements that require ongoing collaborative dialogue to be given significance in new contexts with different landscapes, parameters, requirements, and focus (Harcourt, 2015). The following eleven key principles are described by Carla Rinaldi (2013), a professor in Reggio Emilia who worked alongside Loris Malaguzzi, the founder of the Reggio Emilia approach to learning.

**The Hundred Languages.** A pedagogical strategy of the Reggio approach is that children have one hundred Languages: "100 languages to discover, 100 languages to invent, 100 languages to imagine" (Arseven, 2014, p. 167). This is a metaphorical term used to describe the verbal and non-verbal modes of communication children use to express themselves and develop connections (Harcourt, 2015). The hundred languages are evident in the ways children use materials and resources available to them to investigate and develop new understandings about the world around them (Harcourt, 2015). The hundred languages of children are a pedagogical strategy within the Reggio Emilia setting used to facilitate children's expressions, understandings, interpretations, and to support the communication of their learning using a variety of different media (Fraser, 2012; Wexler, 2004). When preparing the learning environment, it is important that educators provide a variety of materials, allowing each unique child the opportunity to develop their own strategies for learning (Soncini, 2011). An essential element to this principle is that the environments that are provided for children encourage and inspire many ways of expression (Arseven, 2014). For children to be able to express themselves at a high level using many forms of symbolic expression, they need environments that are regulated for developing social, cognitive, lingual, and symbolic structures (Arseven, 2014). In

the Reggio approach, children transform concrete experiences to symbolic experiences using "the hundred languages of children", giving agency to children to express their own understandings in developmentally appropriate ways (Arseven, 2014). Appendix A is a poem written by Loris Malaguzzi titled: *No Way. The Hundred is there*. The poem describes the importance of children's hundred languages and suggests we honour their voice in whichever way it is expressed. For example, in the poem, Malaguzzi describes that children have a hundred ways of listening, marvelling, loving, expressing joys for singing, or understanding and a hundred worlds to discover, invent, and dream. He states, "but they steal ninety-nine. The school and the culture separate the head from the body" (Malaguzzi, 1996, Para 6). He describes the limitations put on children and their freedom of expression by society.

The concept of the hundred languages of children supports the belief of multiple ways of understanding, of acting, of knowing, and of communicating (Stone, 2012). For example, Stone (2012) describes the following application:

> An educator has noticed the children have taken an interest in giraffes and would like to engage the children in this topic using several different languages. They can encourage the language of art by setting up opportunities for the children to create drawings or clay models of giraffes. They can support the language of biology by exploring the giraffe's environment alongside the children, or the language of measurement by supporting children in measuring and comparing the height of different animals in relation to giraffes. (p. 283)

Each exploration of the different languages helps children to facilitate the development of different ways of thinking, knowing, and demonstrating their knowledge about the world around them.

**Participation**. Participation can be accomplished by supporting the development of relationships among the children, educators, families, and the educational program, ensuring many different viewpoints are being considered in relation to the education of the children (Harcourt, 2015). Relationships are the primary connecting dimension of the Reggio Emilia approach (Gandini, 2011) and include the physical relationships within the classroom, the social relationships between the people in the environment, and the intellectual relationships which emerge through explorations (Fraser, 2012). Examples of how educators expand and support participation within the classroom are: developing small group activities, inviting parents to contribute and discuss the educational program, reflecting on what role the educators might play in an experience, and predicting how children might respond to materials and resources in the room (Harcourt, 2015).

**Listening.** Rinaldi (2006) states that listening is an active attitude that not only happens using one's ears, but also through their hearts, minds, and even skin. Listening requires educators to be mindful of the interrelationship among children, educators, and the environment (Harcourt, 2015) and this type of listening helps educators to be in tune with not only the children's learning, but also their own teaching, which is made visible to others through educational documentation (Harcourt, 2015). Documentation is evidence of valuing children's complex thinking and demonstration of knowledge. In Reggio Emilia, children are viewed as capable, powerful, resourceful, active in their growth and can handle highly complex tasks (Edwards, 2011; Wexler, 2004). A strong image of the child is one where their ideas are worth listening to,

and their comments are seen as intelligent efforts to make sense of the world around them (Fyfe, 2011).

**Learning as a Process of Individual and Group Participation.** Through the platform of purposeful play, children are encouraged to debate and exchange ideas with their peers and educators while they explore their environment (Harcourt, 2015). Collaboration is achieved in a Reggio setting by having the teachers, students, families, and community work together at every level of education (Fraser, 2012). A collaborative approach to structuring children's learning experiences provides an alternative view of the image of the child, one where they learn through social relationships (Edwards, Gandini, & Nimmo, 1994). Using the materials, children develop theories that support both their learning and the learning of their peers (Harcourt, 2015). Through the inquiry process, the children use their "hundred languages" to express real emotion through spirituality and mindfulness while being in dialogue with others and the materials (Harcourt, 2015).

**Educational Research**. Rinaldi and Piccinini (2011) describe research as the connective tissue that links their centers to the city, to Italy, and to the center of the world. Research projects are used by Reggio educators as their "contribution to the city, to internationality, to the science of mankind" (Rinaldi & Piccinini, 2011, p. 362). What sets the Reggio Emilia approach apart from other early learning approaches is the primacy given to inquiry (Harcourt, 2015). The educators in a Reggio setting use the observations and documentation taken throughout the inquiry process as research to inform future opportunities in the room and to provide a snapshot of the children's understanding at that moment in time. Inquiry is not only about the children's investigations but is also evident in the professional questions asked by the educators which give

them the opportunity to develop new knowledge and understanding of the craft of teaching, children's learning, and development (Harcourt, 2015).

**Educational Documentation.** Educational documentation showcases children's learning while also making visible the educators' strategies to support and guide their students learning (Harcourt, 2015) and is also referred to as *pedagogical documentation,* which emerges when Reggio educators study the documentation they created during the active "work" by the children and use it to inform their practice and their teaching methods (Fraser, 2012). Pedagogical investigation is done in a collaborative setting among all educators through a process of making the students' work "visible and subject to dialogue, interpretation, contestation, and transformation" (Dahlberg, 2011, p. 225). The students' work is made visible by displaying pictures or artefacts of the children's daily experiences, sometimes in conjunction with quotes or anecdotal notes from the learning experience. The documentation that is collected can take many forms such as: anecdotal notes from the educators, verbatim quotes from the children, pictures of creations that were made using the materials in the room, or artefacts prepared by the children. Pedagogical documentation is a record of learning which follows the narrative of learning that happens while capturing the process of planning, implementation, evaluation, assessment, and decision-making processes (Harcourt, 2015). The result is a record that displays items of value and significance to the subjects, deemed important by the educators, children, and families of the classroom (Harcourt, 2015). There needs to be enough detail recorded so that onlookers can understand the progression of the development that took place, looking past the final product (Forman & Fyfe, 2011).

**Progettazione.** *Progettazione* is the name for the concept of the Reggio Emilia curriculum, which emerges naturally through educator, student, and environment interactions

and collaborations (Arseven, 2014). The Reggio approach does not have a formal or predetermined curriculum or framework to follow but is based on the children's interests which is directed by educators' documentation and determination of what is important to note while observing the children exploring (Harcourt, 2015). For example, while the children are exploring outside, the educators notice they are showing an interest in how the leaves on the trees are changing and falling off. The educator can take this observation and use it as a catalyst to engage the children in a deeper discussion and exploration about trees. The exploration can take many forms, such as introducing books and images within the environment to spark reflection and investigation about trees, or they could bring a paint easel outside near the tree or closer to the window in the classroom for the children to record their observations. Rinaldi (2006) describes *progettazione* as a form of contextual curriculum, which is a strategy that requires a daily practice of observation, interpretation, and documentation. Progettazione is a process that encourages self-reflection of the learning process by both the children and educators of the approach (Rinaldi, 2006). An advantage to this approach is the ethic of care that is placed on the planning and design of new inquiry ideas (Harcourt, 2015). An ethics of care is seen in the questions that are offered during the inquiry, the way the environment is structured to support and encourage learning, potential relationships that may develop based on the children's zone of proximal development, as well as the types of professional inquiry that emerge through the projects (Harcourt, 2015).

**Organization.** The educators in a Reggio Emilia classroom spend a lot of time and effort preparing and organizing for their work with the children (Harcourt, 2015). The educators work deliberately and collaboratively while building a context for potential learning (Harcourt, 2015). It is also important to note that the design of the environment should take a co-constructed

approach where both the children and educators work through reciprocal exchanges about how the environment should be set up to ensure optimal growth and learning in the classroom (Hewett, 2001). The organized nature of the program also considers the unique relationship between the municipality of Reggio Emilia and the children and the complex relationship between the two in regard to choices and responsibilities surrounding the successful implementation of the program (Harcourt, 2015). The relationship consists of shared responsibilities and choices that require a well-organized system to continue the high quality of the program. Rinaldi (2006) describes that a basic value of the Reggio program is one where "community must take responsibility for the quality of the school" (p. 208). She describes that communities must express their best values in the schools, which is done best through involvement within the schools.

**Environment, Spaces, and Relations (Context).** In Reggio, the environment is seen as the third teacher in the room, next to the children and educators (Strong-Wilson & Ellis, 2007). For the environment to be a space that teaches, it needs to be responsive to the children's needs by being flexible and remaining up to date through frequent modifications (Gandini, 2011). In her seminal work, Fraser (2012) outlines eight principles that should be followed to ensure a classroom is acting as the third teacher: aesthetics, active learning, collaboration, transparency, bringing the outdoors in, flexibility, relationship, and reciprocity. Each will be outlined and described below.

***Aesthetics***. The *aesthetics* of a Reggio environment comes from the amount of detail put into the creation of every aspect of the space (Fraser, 2012). When choosing colour for the environment one should use a range of subtle colours, while accent colours can be used to emphasize different areas or objects (Zini, 2005). Lighting is important to the aesthetics of the

Reggio environment and should be illuminated from a variety of sources such as incandescent, fluorescent, vapour, and halogen throughout the environment (Zini, 2005). The children and educators should be able to manipulate the lighting in the room using dimmers to change the intensity as well as change the colour of the light (Zini, 2005). The use of aesthetics is important when thinking about supporting the hundred languages of children because the amount of detail put into the setting will influence how the children are provoked to interact with the provided materials.

**Active learning.** The principle of *active learning* can be achieved by providing a rich, stimulating environment that offers many choices and provokes children to discover a variety of materials while actively exploring, investigating, and solving problems (Fraser, 2012). An active learning environment can be achieved by providing multiple sensorial experiences to help children construct their knowledge and memory (Gandini, 2011). Gandini (2011) describes that an active learning experience offered in a Reggio program where children can explore their senses could allow children to prepare food in the kitchen, giving them the opportunity to use multiple senses while cooking and tasting food. When designing a rich sensory environment, it is essential to make use of colour, light, sound and smell because they correspond to young children's cognitive processes (Zini, 2005). The materials offered in the room should be rich and diverse with features that can change over time (wood, stone, flowers, fabrics) as well as materials that will remain unchanged (glass, steel) (Zini, 2005).

***Collaboration.*** *Collaboration* is achieved in a Reggio environment by providing opportunities for children to work individually as well as a part of a group with other children and adults (Fraser, 2012). Reggio Emilia classrooms are set up to inspire collaborative partnerships among parents, educators and children (Edwards, Gandini & Forman, 2011), which

allows the children to learn the dynamics of group work and the importance of their individual contributions (Fraser, 2012). Creating large murals to be hung in the entrance of the school is an example of a project that allows children to work in collaboration with others to aid in the construction of knowledge (Fraser, 2012).

***Transparency.*** *Transparency* is achieved in the Reggio environment using transparent materials throughout the space such as mirrors, windows, internal glass walls, glass objects, transparent film, large plastic sheets etc. (Fraser, 2012). Transparent materials allow for light to flow more easily through the space, which is an important aspect of the Reggio environment (Fraser, 2012). Materials are put into transparent containers to spark children's interest and add to the transparency of the room (Gandini, 2011). Transparency can be used metaphorically to describe the reason behind the documentation of children's work on the walls of the classroom and entranceways of the school (Fraser, 2012). This style of documentation practice allows the children's learning to be "transparent" and available to the parents and the children to facilitate continued growth and reflection (Fraser, 2012; Brown, 2015). Loris Malaguzzi explains that "throughout the school, the walls are used as spaces for both temporary and permanent exhibits about what the children and teachers have created: our walls speak and document" (Gandini, 2011, p. 41). Displaying the children's creations on the walls of the classroom and in the hallways of the school gives the students a sense of autonomy by seeing their work as important.

***Bringing the outdoors in.*** *Bringing the outdoors in* helps to connect children with their roots and helps them to build respect for their community by strengthening the children's sense of belonging in their world (Fraser, 2012). Natural materials such as pinecones, shells, or pebbles of varying size and colour contribute to creating a particular culture in the classroom such as an environment as a living, changing system (Gandini, 2011). Fraser (2012) explains that the

windows in the classroom need to be low enough for the children to look out them so they can watch changes in the weather and the seasons. It is also important to give the children an opportunity to "bring the outdoors in" and have them contribute materials to the classroom (Fraser, 2012). Bringing the outdoors in could be accomplished by going on a nature walk and having the children collect elements from the outdoors or encouraging children to bring natural elements they found at home or from different places they have visited.

***Flexibility.*** *Flexibility* can be achieved in a Reggio environment by being flexible with space, time, and materials (Fraser, 2012). Creating a flexible Reggio environment requires educators to think differently and plan the classroom to ensure it allows for flexible use of the space and materials (Fraser 2012). For example, instead of creating separate centers for art and science materials, the materials need to be available for use wherever they may be needed within the classroom (Fraser, 2012). Gandini (2011) describes that the Reggio environment needs to be both flexible and adaptable to ensure the children and educators can manipulate the space as they use it.

***Reciprocity.*** *Reciprocity* is achieved in a Reggio environment by ensuring it is "open to change and responsive to the children, parents, and community" (Fraser, 2012. p. 129). Fraser (2012) explains that the concept of the environment acting as a third teacher gives it qualities of a living being which signifies that it needs to be responsive to the classroom community just as a good teacher would do. Educators will have to reflect critically on what kind of learning environment they want to provide and examine each element they include to ensure it reflects their values (Fraser, 2012). For educators to create an environment that is responsive to the children of the classroom, they need to actively listen to the children and provide learning experiences based on their interests (Edwards, 2011).

***Relationship.*** Lastly, *relationship* in the Reggio environment refers to how objects are shown in relation to other materials in the room. For example, Lego blocks could be laid out with pieces of driftwood on a large mirror to explore the relationship between the artificial and natural worlds (Fraser, 2012). The idea of relationship is also seen in the process of documentation because it is designed to observe the relationship between what children are doing and the underlying theories and principles of the program (Fraser, 2012). When setting up the Reggio learning environment it is important to provide spaces for children and adults to work in small groups to allow for more face-to-face interactions to build stronger relationships in the learning community (Gandini, 2011). When exploring the eight principles of creating an environment that acts as a third teacher it is essential to understand their interconnectedness within the classroom setting (Fraser, 2012). These eight principles of the environment as the third teacher contribute to the theoretical underpinnings of the Reggio approach and they support a strong image of the child by giving the child autonomy in the learning by providing an active learning environment.

The idea of the *environment as the third teacher* has been seen in numerous education systems across the world, being interpreted as the practice of creating aesthetically appeasing environments (Harcourt, 2015). The concept has been broadened as part of the Reggio approach and now includes *the context as the third teacher* to show the importance of not only the physical environment but also the importance of relationships, time, and emotion (Harcourt, 2015). The spaces the children explore are thoughtfully and intentionally arranged to spark their interests (Strong-Wilson & Ellis, 2007) while remaining flexible and responsive to their needs (Gandini, 2011). Intentionality can be accomplished using *provocations*, which are defined as: “moments when teachers introduce new elements [into the environment], carefully chosen to entice children into further inquiry” (Turner & Wilson, 2009, p. 12). Provocations are, developed by the

educators, after listening to the children's interactions and through careful consideration of the observations within the room (Fraser, 2012).

**Professional Development.** Professional development is seen as both a right and a duty to support the multidisciplinary nature of the work and the inquiry stance of the program (Harcourt, 2015). Soncini (2011) describes that professional development is essential to ensure the preservation and continuation of the excellence the Reggio approach offers. Professional development is of highest priority and is seen daily through critical reflective practices that take place during observation and documentation (Harcourt, 2015). Observation and documentation is done both individually and collaboratively through staff meetings that focus on current inquiry learning experiences (Harcourt, 2015). To support Reggio educators in becoming more intentional in their practices, professional development in some cases has been tailored to meet the specific needs of the children in their direct care (Soncini, 2011).

**Assessment.** The assessment process includes the children's learning, the professionalism and strategies used by the educators, and examines the quality of the program (Harcourt, 2015). Assessment in Reggio combines the elements of observation, interpretation, and documentation, which are all strongly connected and interwoven with each other (Rinaldi, 2011). For educators, assessment is a way to explore the meaning and intention of the educational projects being pursued in the classroom (Harcourt, 2015). The term transparency can be used metaphorically to explain the importance of children's work being displayed in a school's entranceways and classrooms walls, allowing the children and educators to assess, reflect, and build upon previous learning journeys (Fraser, 2012).

**Reggio Emilia: International Approaches**

Educators from all over the world travel to Reggio Emilia, Italy, to satisfy their curiosities about the unique approach and to explore Reggio Emilia centers in the original setting (Alsedrani, 2018). Educators interested in replicating practices they observed in Reggio Emilia classrooms are warned by Reggio educators not to simply copy their practices, but to reflect on their own culture and beliefs (Rivkin, 2014) because there are no "users manuals" when it comes to implementing Reggio inspired practices outside of its original context Reggio Emilia, Italy (Rivkin, 2014). Rivkin's (2014) wondered, "What constitutes a Reggio inspired program?" He explored the difference between Reggio and Reggio inspired practice by attempting to understand how and to what degree inspired programs had fidelity to the original context (Rivkin, 2014). Rivkin (2014) created a tool to quantitatively measure the level of adherence of Reggio inspired early childhood programs to the educational practices in Reggio Emilia, Italy. The tool took the form of a survey containing multiple choice and short answer questions about the educators' pedagogy, experience in the field, and Reggio inspired practice (Rivkin, 2014). The *Teacher's Survey* was then used to explore programs that identify themselves as Reggio inspired in the United States by assessing their adherence to six different categories: the role of symbolic languages in child development, *progettazione*, role of a teacher, environment as the third teacher, documentation as a multi-faceted tool, and families and communities as partners. Rivkin (2014) concluded that there was a wide variation between programs that label themselves as Reggio inspired with respect to how the approach is implemented and the Reggio elements that are introduced in each program. The two major elements influencing the quality of "Reggio inspired" teaching was the teachers' educational background as well as their years of experience (Rivkin, 2014). The Reggio inspired centers who rated higher on the *teacher's survey*

had educators with educational backgrounds that were higher than the national average (Rivkin, 2014). This may be because the programs in this study were tuition based and offered a higher salary, which in turn resulted in more qualified candidates applying for the positions (Rivkin, 2014). Additionally, Rivkin's (2014) study showed that educators in Reggio inspired settings had a limited turn over compared to other early childhood centers, and on average stayed in the field of ECE for several years.

When exploring Reggio inspired practice in New Zealand, Bayes (2006) noticed that while educators were engaging with Reggio Emilia pedagogy, they were rethinking and reconstructing their overall view of their teaching and learning environments. Pohio (2009) suggested the approach be used as an inspiration, but not as a blueprint or recipe to replicate. She expressed the importance of ensuring Reggio inspired New Zealand educators keep their local connection at the forefront when reviewing their programs. One-way educators can support this connection is by weaving in the sociocultural context of New Zealand into collaborative play with children and their communities. By engaging in this practice, educators can embrace Reggio Emilia pedagogy without losing the integrity of New Zealand's culture and identity through visual art expressions (Pohio, 2009).

From a Canadian context, some provinces, such as Ontario, British Columbia, and Manitoba, are using the Reggio Emilia philosophy as a model for how school systems should view children with diverse abilities and plan for their instruction. There is a notable difference between how the Canadian school system and the Reggio Emilia approach in Italy view children. Loreman (2007) explains that in Reggio classrooms in Italy, there is a strong, positive view of children and their abilities, whereas in the Canadian context, there is often a negative and deficit-based view of the child by educators in the school system. Loreman (2007) believes that this

creates a significant barrier to the successful implementation of inclusive education, such as the Reggio approach, in Canada. When examining the Reggio and Canadian views of a child-centered pedagogy which is vital to the effective implementation of inclusive practices to support the education of the whole child, the Canadian view can be viewed as constructed from a modernist standpoint while the Reggio Emilian view develops from a postmodern perspective (Loreman, 2007).

The modernist standpoint suggests that in a child-centered pedagogy, children are at the center of the world and are reproducers of a common body of knowledge, identity, and culture that everybody should know (Loreman, 2007). The postmodern perspective decenters children and views them within the context of the wider world in which they live, where learning is constructed through a social context (Loremen, 2007). This distinction suggests that a postmodern perspective gives children more freedom in their thinking and ways of developing understanding, which will better support the needs of children with diverse abilities. Loremen (2007) suggests that another way to achieve a stronger educational system for children with diverse abilities here in Canada is to have educators work with parents to adopt a strong view of the child, as practiced in Reggio settings in Italy. To achieve this, an educator would have to engage in deep reflective practice about their current views of children and engage in professional development to support their understanding of children as being capable and competent.

**Critiques of the Reggio Emilia Approach**

When analyzing the Reggio Emilia approach through a critical lens, scholars such as Johnston (1999) position Reggio views as fanaticism rather than reality. Johnston explains that

the descriptive and expressive commentary, academic papers, and conferences/presentations about Reggio Emilia schools from educators and scholars who have visited the original setting in Reggio Emilia, Italy, act like an "exotic tourist brochure" about which people fantasize, enticing both parents and educators to explore the approach more deeply. Robertson (2006) supports this criticism and states that, "our gaze upon Reggio Emilia is often dazzled by the gems which bejewel the outward apparition, the sheer beauty of the environmental images that visitors encounter" (p. 152). While exploring the impact of the Reggio Emilia approach on early childhood education, Johnston (1999) found a critical issue to emerge regarding the power the approach holds over interested educators outside of the European school system. This power over educators and early childhood centers inspires them to adopt a large-scale implementation of the approach with minimal background knowledge to support their programs (Johnston, 1999). Without a solid knowledge base to support these early learning programs, educators can feel overwhelmed and misguided, often leading to unsuccessful implementation of the approach causing the children's learning and experiences to be negatively affected.

Firlik (1995) examines several limitations of executing the Reggio Emilia approach outside of its European roots. He explains that one must consider cultural differences to effectively implement the Reggio approach outside of its original setting of Reggio Emilia, Italy. Thus, one must consider the differences in patterns of thinking, attitudes within the macro society, and cultural conventions or dispositions (Firlik, 1995). In relation to the differences in patterns of thinking, Firlik (1995) compares American and Italian thinking to inductive reasoning. He explains that Americans tend to think of the world in terms of facts, which then turn into ideas, whereas the children of Reggio Emilia make sense of the world using an inquiry approach where they explore their interests, ideas, and theories to come up with an understanding

about the world around them (i.e., a deductive approach). When comparing each of the macro societies, American versus Italian, Firlik (1995) argues that the concepts of individualism versus collectivism are the most predominant obstacles in the way of the authentic application of the Reggio model. In terms of an educational approach, Americans support concepts of individualism through the value put on independence and self-directed learning, but European models support more of a collective approach using group learning and decision making (Firlik, 1995). Finally, the differences in cultural disposition between work and play affect the successful implementation of the Reggio approach in the American school system (Firlik, 1995). In American culture, it is common to see a separation between work and play, whereas in Italian culture, one may find more of an emphasis put on the importance of play in the daily life of Europeans (Firlik, 1995). Thus, for American educators to successfully implement the approach, it would require a change in pedagogy, view of the child, and belief in the importance of play as a vehicle for learning. Instilling a strong image of the child would be best supported if nurtured at the beginning of teachers' careers, giving them the opportunity to expand their knowledge and understanding as they grow in the profession.

In a more recent critique, Matusov, Marjanovic-Shane, and Meacham (2016) challenge the use of documentation and assessment of learning, as seen in Reggio Emilia schools, as important and necessary for providing good education. They discuss that "documentation of learning on teacher's demand leads to surveillance, discipline, distraction, and robbing of students from ownership of their education" (p. 6). They describe that the process of documentation and making learning visible disrespects students' agency and privacy, turning the students into objects rather than subjects within the classroom setting. They explain that the documentation process is being used to create a favourable image of schools and to justify

educators' employment rather than educators' focusing their time on serving the direct needs of students. Matusov, Marjanovis-Shane, and Meacham (2016) state that this process is leading to a broken relationship between students and their educators.

**Ontario's Pedagogy for the Early Years and Connections to the Reggio Emilia Approach**

To support the idea of Reggio inspired practice in Ontario, the following section makes connections between *How Does Learning Happen? (2014)* and the Reggio Emilia philosophy which informs this dissertation work. Reggio inspired practice is not the norm in early learning settings in Ontario; however, the following section describes how Reggio Emilia practices have been embedded in the current pedagogy for the early years in Ontario. The Reggio Emilia approach to early childhood education has received renewed attention in Ontario's early years sector with its infusion in the *HDLH?* (Ontario Ministry of Education, 2014). The document references the work of many well-known authors of the Reggio Emilia approach to education such as Callaghan (2011, 2013); Callaghan & Wein (2012); Dahlberg, Moss & Pence (2007); Fraser (2012); Malaguzzi (1993); Moss (2010); Rinaldi (2004); and Wien (2004, 2005, & 2013). The *HDLH?* document also references Malaguzzi, the founder of the Reggio Emilia approach, who discusses different schools of thought that have influenced thinking in the early years including the environment as the third teacher. After I conducted a careful analysis of the *How Does Learning Happen?* document (Ontario Ministry of Education, 2014), the following concepts, with strong roots in Ontario's pedagogy for the early years and Reggio Emilia emerged: children as capable and competent, building relationships, pedagogical documentation, the learning environment, and fostering communication and expression. The analysis of the document consisted of reviewing the *How Does Learning Happen?* (2014) reference list to look for cited authors who write about Reggio Emilia ideas as well as combing through the document

looking for Reggio Emilia principles used when discussing the Ontario early years approach. When a Reggio author or principle was mentioned, the quote was highlighted. After this process was complete, all the highlighted quotes were further divided into common themes, as mentioned above: children as capable and competent, relationships, pedagogical documentation, and the environment as the third teacher. Each one of these concepts will be further discussed to illuminate the connections embedded within the Ontario pedagogy for the early years and the Reggio Emilia approach to learning.

**Children as capable and competent**

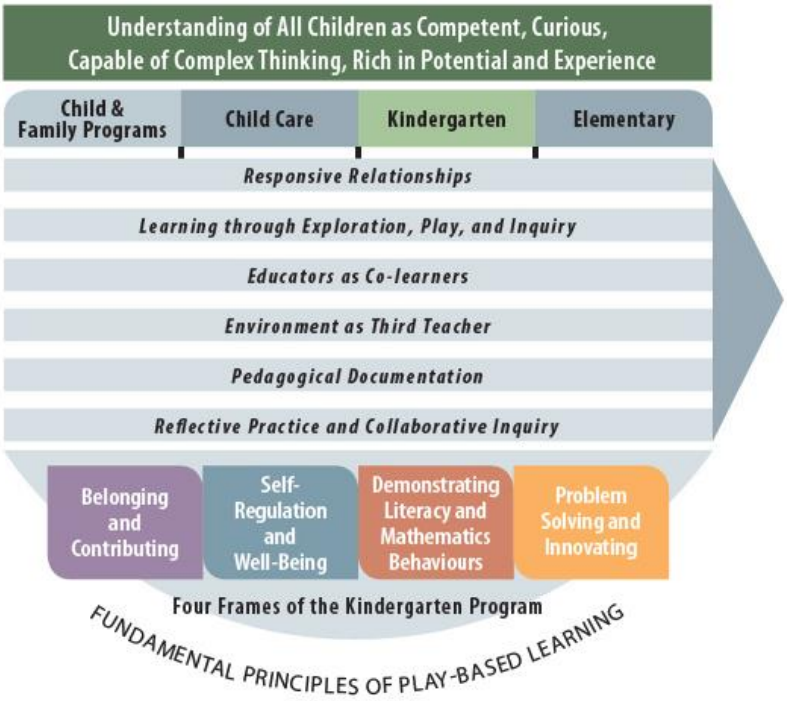
The introduction of the *How Does Learning Happen*? document highlights the importance of a strong image of a child and how that image has a profound impact on early years settings (Ontario Ministry of Education, 2014). The HDLH document is "grounded in a view of the child as competent and capable" (Ontario Ministry of Education, 2016, p. 12). Educators who view children this way are better able to meet their students' needs and advance their thinking further (Ministry of Education, 2014). The document describes the following shared understanding of children (Ontario Ministry of Education, 2014):

> All children are competent, capable of complex thinking, curious, and rich in potential and experience. They grow up in families with diverse social, cultural, and linguistic perspectives. Every child should feel that he or she belongs, is a valuable contributor to his or her surroundings, and deserves the opportunity to succeed. When we recognize children as competent, capable, and curious, we are more likely to deliver programs that value and build on their strengths and abilities. (p. 6)

The HDLH document supports a continuum of learning that begins in early childhood programs and extends across kindergarten and into the primary grades (Ontario Ministry of Education, 2014). Figure 2.3 is an image of this continuum from *How Does Learning Happen? Ontario's Pedagogy for the Early Years* (Ontario Ministry of Education, 2014).

**Figure 2.3**

*The Continuum of Learning Model (Ontario Ministry of Education, 2014, pg. 14)*




The overarching view of children as capable and competent embeds itself within this continuum as demonstrated by its location across the top of the figure, spanning across all the elements covered in the document. In relation to the HDLH document, it is essential for educators to share this view of children to ensure they are providing quality, developmentally appropriate, and meaningful learning experiences for their students. This continuum shows that viewing children as capable and competent requires responsive relationships, educators as co-learners, and reflective practice. Educators need to trust in their students and their potential as

learners before they can develop this holistic view of children as capable and competent. A strong view of the child as capable and competent is also essential when understanding each of the four foundations in the HDLH document: belonging, well-being, engagement, and expression in a play-based learning environment (Ministry of Education, 2014).

One of the fundamental principles of the Reggio Emilia approach to education is the strong image of the child which is aligned with and lends support to HDLH and the assertion that children are capable and competent. Wexler (2004) describes children as capable, powerful, and resourceful beings who are seen as competent and capable of complex ideas. In the Reggio Emilia approach to education, the strong image of the child is one which supports children's ideas as intelligent and worthy of consideration because they are ways in which children try to make sense of the world (Fyfe, 2011). Educators must understand that children's thoughts and theories are deeply rooted in their culture, society, and family values (Fraser, 2012). To support this powerful image of the child, educators slow down and actively listen to their students' ideas, opinions, and comments through a pedagogy of listening (Fyfe, 2011). Every child is unique and has the right to be heard while they explore their thoughts, theories, and identity and it is the role of the teacher to aid them in this process (Edwards, 2011).

**Building Relationships**

The HDLH pedagogy for the early years emphasizes the importance of relationships in relation to the learning and development of young children (Ontario Ministry of Education, 2014). The introduction of the document states "*How Does Learning Happen? Ontario's Pedagogy for the Early Years* is a professional resource guide about learning through relationships for those working with young children and families" (Ontario Ministry of

Education, 2014, p. 5). Figure 2.4 reveals the different contexts of relationships and their interconnectedness within the early years. The child sits in the middle of the triangle surrounded by family, the environment, and the educator(s). What is important to note about this diagram is how the arrows not only go from the child to the three different relationships, but that the relationships are also connected outside of the child. For example, there is a relationship between the educator and the family, as well as the family and the environment outside of the relationship with the child. These relationships and their context are all important to the child's learning and development and are also interconnected.

**Figure 2.4.**

*Diagram of Child, Family, Educator, & Environment Relationship (Ontario Ministry of Education, 2014, p. 6)*


The HDLH document references the Early Learning for Every Child Today (ELECT) document which highlights strong, respectful, and reciprocal relationships as being necessary in the early years (Best Start Panel on Early Learning, 2007). There are four overarching foundations for

learning in the HDLH document: Belonging, Well-Being, Engagement, and Expression, which are considered "ways of being" and are a vision for what children should experience each day. One of the foundations, Belonging, puts the importance of relationships at the center by further describing it as being achieved through cultivating authentic relationships and connections (Ontario Ministry of Education, 2014). Educators play an important role when establishing strong responsive relationships in the early learning setting, and the HDLH document explains their role as follows (Ontario Ministry of Education, 2014):

> The role of the educator is multidimensional. The best educators, first and foremost, use a warm, responsive, and inclusive approach, building positive relationships with children, families, colleagues, and communities. They engage in reciprocal relationships with families and caregivers, learning about, with, and from them. (Ontario Ministry of Education, 2014, p. 19).

Learning through relationships is a key element to *The How Does Learning Happen?* pedagogy as well as one of the primary goals of the early years (Ontario Ministry of Education, 2014). There are many different types of relationships within the early learning community. The relationship between the teaching team is important as it sets the tone in the classroom. It is important for educators to build this relationship in ways that allows them to be open to each other's views and approaches and to ensure they are providing the best possible learning environment for the children and a positive work environment for themselves. The relationship between the educator and child is reciprocal in nature and should be developed through caring, and authentic connections (Ontario Ministry of Education, 2014). The children learn to develop relationships with their peers where they learn from each other and contribute as part of a group. Another very important relationship that is built is the relationship between students and their community and the idea of how they contribute to the world around them. Educators develop

relationships with families to build a more complex understanding of their students and to support their view of children as capable beings. Educators who are aware of the importance of these relationships build connections with their students because they understand that relationships are fundamental to a child's personal, social, and emotional development (Ontario Ministry of Education, 2014).

The importance of building meaningful relationships is emphasized in *The How Does Learning Happen? document* (Ontario Ministry of Education, 2016) and supports the fundamental Reggio principle of relationships. Fraser (2012), a Reggio inspired author, is quoted below reflecting about relationships:

> The deepest language of all… is the language of relationships. It goes much deeper than more easily measured skills like logical thinking and problem solving. Learning is about making relationships, and this is the language that enables us to absorb information and process it at a deep level (p. 304).

Fraser describes three important relationships in the Reggio Emilia approach to education: the physical, social, and intellectual relationships within the classroom. Gandini (2011) describes relationships as the primary connecting dimension of the Reggio approach. She explains that it is the responsibility of the educator to set up the environment in a way that initiates face-to-face interactions and allows the children to work in small groups to increase interactions and help build their relationships. The importance of relationships is also supported by Rinaldi (2006), who describes the pedagogy enacted in the schools as a pedagogy of relations, which has been an ongoing research project around supporting the relationships among the children, adults, and the school environment.

**Pedagogical Documentation**

Pedagogical documentation is used in the early years to value, discuss and make the children's learning visible (Ontario Ministry of Education, 2014). Pedagogical documentation is defined as, "the process of gathering and analyzing evidence of learning to make thinking and learning visible which provides the foundation for assessment *for*, *as*, and *of* learning" (Ontario Ministry of Education, 2016, p. 11). This process requires educators to gather evidence of the children's learning in many different forms, use the evidence to plan further learning opportunities, and then document the evidence that is used as a form of assessment in the early years. Pedagogical documentation is not a form of summative assessment, but rather a cyclical and ongoing process that facilitates revisiting and rethinking of the children's theories and explorations within their learning environments.

Pedagogical documentation is also a term used in the Reggio Emilia approach to learning. In Reggio, pedagogical documentation is defined as "a process for making pedagogical (or other) work visible and subject to dialogue, interpretation, contestation, and transformation" (Dahlberg, 2011, p. 225). Pedagogical documentation is more than just the child's finished product. For example, it might be a panel of photographs and supporting text explaining the learning process that leads up to the finished project, displaying the entire journey the child and educators undertook (Forman & Fyfe, 2011).

The HDLH document (Ontario Ministry of Education, 2014) references Reggio author Rinaldi (2004) in describing pedagogical documentation as a way to listen to children and learn about their experiences. She describes that the educator uses pedagogical documentation to make the children's learning visible to other for interpretation (Ontario Ministry of Education, 2014).

What an educator decides to document about their students' learning reflects what an individual values and what they deem important in the learning process (Ministry of Education, 2016). Children can contribute to this process by being the creators of the documentation that is being examined. They can also contribute by being invited to share their thoughts, insights, and wonderings about the documentation as the educators are examining the different artefacts. Dr. Carol Anne Wein (2013), a Reggio inspired professor in the early years, is referenced in the HDLH document text for her work on pedagogical documentation, sharing the following quote: "Pedagogical documentation supports educators in both including child development in their view, but also looking beyond development to capture broader aspects of experience for reflection." (Ontario Ministry of Education, 2014, p. 21). Wein (2013) explains that when studying documentation, an educator needs to ask themselves questions such as: What are we trying to understand? What are the working theories we see?

Fraser (2012) describes that in Reggio, the examination of pedagogical documentation, which is done from multiple perspectives, is considered research of the educator's own teaching methods. Edwards, Gandini, and Forman (2011) support this notion, and discuss that documentation provides Reggio educators with an opportunity for continuous improvement and renewal and serves as a tool for research. The research is then used to inform practice and prepare next steps for the children in their care.

**The Learning Environment**

A significant principle to the Reggio Emilia approach to learning is the "environment as the third teacher", next to the children and educators in the room (Strong-Wilson & Ellis, 2007). Planning and designing environments that act as a "third teacher" is one of the pedagogical

approaches outlined in the *How Does Learning Happen?* document as way to nurture learning and development in early years settings (Ontario Ministry of Education, 2014). An early learning space is thoughtfully designed to invite, provoke, and enhance learning and evolves as the children use and negotiate the space through their explorations. It is important that the space is co-constructed with the children because it prompts them to become engaged and motivated in their learning. Loris Malaguzzi (1993) describes that the environment is "valued for its power to organize, promote relationships, and educate" (Ontario Ministry of Education, 2014, p.20). Wu (2003) suggests that variables in the classroom such as giving students the freedom in choosing the content, methods, and outcomes of their learning leads to a higher level of intrinsic motivation for student learning.

The environment as the third teacher is also a term that stemmed from the Reggio approach and is considered one of the underlying principles. Reggio author Fraser (2012) states "a classroom that is functioning successfully as a third teacher will: be responsive to the children's interests, provide opportunities for children to make their thinking visible, and then foster further learning and engagement" (p. 67). A key to learning goes further than the physical space—there is also an emphasis on how the social space is constructed (Ontario Ministry of Education, 2016). It is the role of the educator to set up the learning environment to meet these criteria and is accomplished through careful observation of the children and their interactions within the space.

**Fostering Communication and Expression**

A goal for children included in the *HDLH?* (2014) document states that "every child is a capable communicator who expresses himself or herself in many ways" (p. 41). This goal is outlined under the Expression foundation for learning and is supported by the expectation that

Ontario early childhood programs foster all forms of children's communication and expression (Ontario Ministry of Education, 2014). Deep conversations are happening with children of all ages using verbal and non-verbal cues and gestures, and it is an early childhood educator's responsibility to respond to the many languages children are using to communicate (Ontario Ministry of Education, 2014). It is important to note that communication also happens through creative expression, "when children manipulate materials, explore music and movement, create symbols (e.g., mark-making), and engage in imaginative expression (e.g., visual art) and dramatic play, they are communicating" (Ontario Ministry of Education, 2014, p. 42). It is through responsiveness to the children's different forms of communication that the ECEs can give every child, no matter their age, a "voice" in their programs (Ontario Ministry of Education, 2014). The idea of fostering all forms of communication and expression and responding to the many languages of children connects beautifully to the Reggio approach, one deeply embedded and showcased in this study, of the hundred languages of children.

**Synthesis of Connections**

The connections made in the above sections between Ontario's pedagogy for the early years in *HDLH?* (2014) and the Reggio Emilia approach to learning reveal that although there is no direct mention of the Reggio Emilia approach to learning in the *HDLH?* (2014) document, there are deep roots to Reggio principles found within the framework. In an exploration of Reggio inspired practice in Ontario, Nguyen (2010) discovered that Reggio inspired early childhood educators were able to navigate challenges they faced in their daily lived experiences. Her findings also suggested an exploration of alternative approaches to early childhood education, such as the Reggio Emilia approach, when thinking of a reconceptualization of the early years in Ontario (Nguyen, 2010). Wood, Thall, and Parnell (2015) looked to the Reggio

Emilia approach when refining their early learning and inquiry approaches in the primary grades in a northern Ontario school board. The educators in this study discussed that by using Reggio Emilia inspired practice they were able to gain "a deeper appreciation of the ability, curiosity, intelligence and self-reliance of children" (Wood, Thall & Parnell, 2015, p. 107), supporting their view of children as capable and competent. They discovered that the use of pedagogical documentation led to a deeper understanding of learning the students interests and desires, and led to greater achievements overall (Wood, Thall & Parnell, 2015). The educators' relationships with the students were positivity affected in a Reggio inspired setting and was evident in students who typically had difficulty coping in the classroom setting. They were able to find success in the new opportunities offered (Wood, Thall & Parnell, 2015). Finally, by using Reggio inspired practice to set up the learning environment to act as the third teacher in the room, the educators learned to trust the environments they created to support student learning (Wood, Thall & Parnell, 2015).

# Chapter 3: Methodology

Chapter 3 includes a look at the COVID-19 limitations that required a redesign of the original research study followed by a brief introduction of the research questions and research methodology. The chapter then looks at the research design, discusses the research site and participant selection, and finally the methods of data collection, and analysis are presented.

## Research Questions

This dissertation study explored the following research questions to understand the development of children's ideas about the world around them and how they express them within a Reggio inspired setting. In a Reggio context, children's theories can be described as the following: "children's predictions, hypotheses or ideas that are created in order to explain and give mean to the world around them" (Berdoussis, 2006, p 5). For children's theories to exist, from the simplest to the most refined theories, they need to be expressed, communicated, and listened to in order to support theorization (Rinaldi, 2001). Below are this study's research questions:

1. What are the ideas children might be generating, testing, and/or confirming in a Reggio inspired learning environment?
    - In which ways might children be generating, testing, and/or confirming these ideas?
2. How are educators fostering children's development of their ideas in a Reggio inspired learning environment?

Table 3.1 below outlines the tools I used to answer the research questions. I explain each strategy in more detail throughout this methodology section.

**Table 3.1**

*Qualitative Data Sources*

| Research question | Data Collection Tool | Sampling Strategy | Sample Size |
|---|---|---|---|
| 1. What are the ideas children might be generating, testing, and/or confirming in a Reggio inspired learning environment? | -Video Observation<br>-Observational field notes | Purposeful/Convenient | n= 30 |
| □ In which ways might children be generating, testing, and/or confirming theses ideas? | -Video Observation<br>-Observational field notes | Purposeful/ Convenient | n=30 |
| 2. How are educators fostering children's development of their ideas in a Reggio inspired learning environment? | -Zoom Semi-Structured Interviews<br>-Video Observation<br>-Observational field notes | Purposeful | n= 7 |

**Research Methodology**

A qualitative mini-ethnographic case study approach was chosen to frame this study because the approach enabled for a detailed description of a small population where there is a focus on words and images rather than numbers (Mukherji & Albon, 2010). Merriam and Tisdell (2016) explain that qualitative research is richly descriptive in nature where "words and pictures rather than numbers are used to convey what the researcher has learned about a phenomenon" (p. 17). A qualitative research design was essential to this research study because it supported the multi-methods approach, which included educator interviews, video-based observation, and detailed observations. Qualitative research supports studies that are carried out in naturalistic settings (Mukherji & Albon, 2010), such as the Reggio inspired classrooms being explored in this study.

An ethnographic approach was selected because it focuses on the study of people in their own environment and uses methods such as participant observation (through pre-installed GoPro cameras, and through-the-window observations as is the case in this research) and Zoom interviewing (which allowed for the interview to take place off-site of the child-care settings). This research falls under what Fusch, Fusch, and Ness (2017) call a "focused-ethnography (or mini-ethnography)" which is used when researching a specific or narrow field of inquiry, and mainly when time constraints are evident (Fusch, et al., 2017). Mini ethnographies are conducted in a much shorter time frame than classic ethnographic studies and can be completed in weeks, months, and up to one year (Fusch, et al., 2017). The authors assert that data saturation can be reached faster in a mini ethnography because the study is bounded by time and space, typically using a case study design (Fusch, et al., 2017).

Ethnographic research aims to understand people and why they do the things they do through very detailed and recorded observations of the individuals and the context in which they interact (Aubrey et al., 2000). Ethnographic research is used by educators when they want to know more about the children they teach because the insights developed are important for understanding the process of teaching and learning (Aubrey et al., 2000). In this study, an ethnographic approach allowed for the explorations of children's ideas in a Reggio inspired child-care context. The approach helped me to understand children's ideas about the world around them and how they experience the Reggio Emilia pedagogical strategy of the hundred languages of children.

Based on the site selection, a case study design was appropriate for this study. Merriam and Tisdell (2016) define a qualitative case study as "an in-depth description and analysis of a bounded system" (p. 39). The data for this study was collected from two separate field sites,

which are intrinsically bound under one child-care center. In a case study design, researchers should be able to "fence in" what they are going to study (Merriam & Tisdell, 2016). Case studies support an investigation with a narrow focus which leads to very detailed data to be collected (Mukherji & Albon, 2018). For this study, a case study approach allowed me to explore a child-care center which supports the Reggio Emilia approach to learning and embodies the hundred languages of children.

**Research Design**

In a time (COVID 19 pandemic) where conducting in-person research with children was not attainable, I looked to professionals in the field for support in alternative methods to listen to young children. Visual sociology and elements of the Mosaic approach were central to the development of the unique methods and approaches used to elicit the data. The specific methods used in this study, video-based observation, educators' interviews, and through-the-window classroom observation (which are elaborated in the Data Collection Methods section below) were designed in consultation with the supervision committee and in response to the then current restrictions. Visual sociology was used to support the use of video data collection to obtain a bird's eye view into the classroom while being removed from the setting. Principles of the Mosaic approach were used to support the collection of the educators' perspectives, as well as the importance of listening to young children through careful observations. Although the ideal methodology for this study would have included working alongside children, I needed to adapt to the changing pandemic restrictions, and the selected methods were used as a best effort to listen to young children's ideas in a unique and challenging time.

## Visual Sociology

Most methods researchers use to work with children resemble traditional paradigms, such as interviews and surveys (Henward, 2016). In the research process, there is often an emphasis on the spoken word, but it is also essential for researchers to recognize the significance of visual data when exploring research methods because it opens richer data collection options with a broader range of participants. Visual data collection methods allow the researcher to use both their visual as well as auditory memory when engaging in the research process. To break down these traditional hierarchies, researchers need to employ more imaginative methods that involve reflection and have an openness to ever-evolving methods (Henward, 2016). Visual data collection was central to this research study because it allowed for the observation of children in their learning environment without having to enter the setting. This research study supported visual data collection in the form of video-based observation, along with online educator ZOOM interviews, and through-the-window classroom observation, which were carefully selected to document toddler-aged children's ideas.

Qualitative researchers have been using images accompanied with printed words over the last three decades to "enhance understanding of the human condition" (Prosser, 1998, p. 1). Visual images have been used in a wide range of forms including, but not limited to, video, photographs, drawings, cartoons, graffiti, maps, diagrams, signs, and symbols. Visual images give researchers an alternative way to examine data. This approach, termed *visual sociology*, is used in research in two ways—first, by examining visually observable aspects of society to gain a deeper understanding in different subject matters, and second by using visual methods to develop understanding and deeper meaning (Pauwels, 2015). Visual research ranges from the study of existing visual data to the production of new visual data, to using visual materials to

trigger a deeper understanding (Pauwels, 2015). Visual data in the form of video-based observations of toddler-aged children exploring in their learning environments was elicited. Mitchell (2011) discussed the challenges behind the interpretive process involved in working with visual research. She looked to other scholars in the field and generated some suggestions and guidelines to follow during the interpretive process of visual research. The first consideration is that to critically engage in the interpretive process, researchers must facilitate reflexivity as well as position oneself within the research. It is important to note that when working with visual data, researchers may need to also draw other types of data analysis, such as content analysis, or to engage in coding and developing themes. It is important that the type of visual data with which researchers choose to work with be guided by the research questions, aim of the study, and researcher's experience and is acceptable and practical for the participants (Mitchell, 2011). The supervision team worked collaboratively to develop methods which supported the research questions and aims of the study, while ensuring that they also adhered to the current restrictions for in-person research due to the COVID pandemic. This research study used video observation to capture children exploring their ideas in the learning environment, without the interference of the researcher in the room. Instead of working alongside the children in the study and collecting visual data within the learning environment, I removed myself from the setting and installed two GO-Pro cameras to capture the visual elements of the interactions in the learning environment. I then later reviewed the video data and transcribed it using the running record note-taking format. Pink (2001) explains that visual elements are becoming increasingly popular in ethnographic studies because both approaches complement one another well. The visual documentation using video observation gave a unique view into the classroom setting without researcher interruption

or influence. A further and more detailed explanation of each data collection method can be found below.

### The Mosaic Approach

This study used pieces of the Mosaic approach which fit with the COVID-19 measures at the time of data collection. The pieces selected for use in this study (and are listed in Table 3.2 below), include: a multi- method approach (using video observation, through-the-window observations, and ZOOM educator interviews), a reflexive approach (which included the children and their educators), and an adaptable approach (to support the Reggio inspired early learning setting) which focused on children's lived experiences. Using this approach during the COVID-19 pandemic supported the researcher in documenting children's ideas during a time where physical distancing protocols were in place. The multi-method Mosaic approach allows for multiple voices and perspectives to be heard, aiming to create a dynamic image of a child's world alongside the child (Clark, 2017). The various methods of the mosaic approach offer different modes for expression. For example, the zoom interviews supported the educators in verbally sharing their perspectives, while the video observations gathered data on the children while they freely explored their learning environment. The methods used in this study and inspired by the mosaic approach included the gathering of educators' perspectives as well as listening to young children through observation. The Mosaic approach framework for listening to young children is outlined in Table 3.2 (Moss & Clark, 2011, p. 7).

**Table 3.2**

*Framework for listening to young children developed by Moss and Clark (2011)*

| Principle | Description |
|---|---|
| Multi-method | · Recognizes the different 'voices' or languages of children |
| Participatory | · Treats children as experts and agents in their own lives |
| Reflexive | · Includes children, practitioners, and parents in reflecting on meanings; addresses the question of interpretation |
| Adaptable | · Can be applied in a variety of early childhood institutions |
| Focused on children's lived experiences | · Can be used for a variety of purposes including looking at lives lived rather than only at knowledge gained or care received |
| Embedded into practice | · A framework for listening which has the potential to be both used as an evaluative tool and to become embedded into early years practice |

Due to restrictions at the time of data collection, not all the principles were applicable in this study, however the multi method approach, with a focus on children's lived experiences, and the adaptability and reflexivity of the approach helped to support the unique methods selected.

The Mosaic approach was inspired by the Reggio Emilia notion of the competent child and the pedagogy of listening and relationships (Clark, 2005). "The mosaic approach gives young children the opportunity to demonstrate their perspectives in a variety of ways, calling on their hundred languages. Each tool provides a piece of the overall picture" (Clark, 2017, p. 34). This framework uses a multi-method approach to help eliminate the power differential between adults and children (Moss & Clark, 2011). The Mosaic approach advocates seeing young children as experts in their own lives, skillful communicators, active participants, meaning makers, researchers, and explorers (Clark, 2007). Clark (2004) explained that the Mosaic approach evolved out of three theoretical starting points. The first was her acknowledging the emerging sociology of childhood where children are seen as beings not becomings, and that

children are capable and competent at all ages and stages of life. She then examined participatory appraisal and how it has been used to give voice to those who are disempowered. Her last theoretical starting point was her background in the early years and her notion of children as competent beings.

The Mosaic approach is known for being adaptable and can be used in a variety of different contexts to capitalize on ways of eliciting and recording children's perspectives (Clark, 2017). Sumsion et al. (2011) used video recordings in the form of "baby cams" in an adapted version of the Mosaic approach to piece together details of infants' experiences from multiple perspectives to get a better picture of their early learning experiences. In an extensive review of the Mosaic approach, Sumsion et al. (2011) confirm that "observation remains a foundational method for listening to young children, especially those who… cannot yet communicate their experiences in elaborated ways" (p. 126-127). Clark (2017) reveals that observations in the early years support researchers in listening to children's body language such as different facial expressions, noises, and movements, to better understand their experiences in the classroom. This research study used observations to view the children's interactions in the room from a distance and included both video observations as well as through-the-window observations. The through-the-window observations of the classroom and the children interacting in the environment were recorded as field notes while observing outside the schools and through the windows of each of the four different classrooms in the study. Mukherji and Albon (2018) explain that researchers in ethnographic studies keep detailed field notes to better understand the group they are studying. The field notes are narrative in nature and include detailed observations of each classroom to support the development of a rich picture of the research environment.

**Site Selection**

The site chosen for this study was a Reggio Emilia inspired child-care center in southern Ontario. The chosen site provides care to children ranging from eighteen months to ten years of age in a program which emphasizes the image of the child, role of the teacher, parents as partners, and the environment as the third teacher as part of their curriculum. The school enacts the Reggio Emilia approach through their emphasized commitment to the various relationships in the learning setting, obligation to on-going staff development, and respecting/supporting the role parents play in their child's education as per their printed mission statement. The selected site hosts three separate locations, pseudonyms have been used to protect privacy: Lily School, Lilac School, and Trillium School. This study took place at two of the three sites, Lilac and Trillium, due to the age of the children in the study (toddlers). Lily school has a school-age population, a group that was not included for the purpose of this study. The four participating classrooms, two in Lilac School and two in Trillium school, were purposely selected to take part in the study in consultation with the Director of the child-care setting because she is familiar with the educators, children, and learning environments in the centers. The sites were selected because they best embodied the principles this study is investigating. Purposive sampling was chosen for this study to allow for a non-random sample of a specific population (Neuman & Robson, 2012) and because the students included need to be from the toddler age group. Fielding (2008) notes that it is important for a researcher's values to align with the research setting because they become a significant part of the environment while spending time there. Mukherji and Albon (2018) support this notion and state that when a researcher's values do not align with others in the research setting, it is possible that deception could be embedded in the data collection and field notes due to the clash in values. In staying true to the nature of this research, and to gain an in-

depth understanding of the hundred languages of children, it was essential that the participating child-care center had some knowledge of the Reggio Emilia approach to education. This specific center was chosen based on their commitment to the Reggio Emilia approach to learning and Reggio inspired curriculum as described by the director of the program and the information included in their center's website.

**Participant Selection**

In qualitative research, the research is carried out through fieldwork in naturalistic settings rather than experimental conditions (Mukherji & Albon, 2018). This is important in early childhood research because it allows researchers to observe children in an environment and context in which they are already comfortable, aiming to empower the children (Mukherji & Albon, 2018). For this research study, I observed children in the toddler (18 months- 2.5 years old) age group. Research took place in four separate classrooms-- two located at the Lilac site and two located at the Trillium site. The total sample for this study was 30 children across all four classes. In addition, a sample of 7 Educators from the participating classrooms were interviewed. Table 3.3 includes information about the educator profiles such as years of experience in the field and their education level. It is important to note that full parent/guardian and educator consent was received from all participants. More information about the consent process is included below. Table 3.4 includes information about the participants at the two research sites, the classrooms involved, and the total amount of children and educators in each room.

**Table 3.3**

*Educator Profiles*

| # of Educators | Total Years of Experience | Education Level |
|---|---|---|
| 4 | 5-10 years | College diploma/RECE |
| 2 | 1-2 years | College diploma/RECE |
| 1 | 1-2 years | Completing a University degree in psychology |

**Table 3.4**

*Outline of Site and Participant Selection*

| Site | Room Number | Classroom Name | # Children | # Educators |
|---|---|---|---|---|
| Lilac Site (LS) | Classroom 1 | LS Jr Todd | 5 | 1 |
| | Classroom 2 | LS Sr Todd | 9 | 2 |
| Trillium Site (TS) | Classroom 3 | TS Sr Infant | 5 | 2 |
| | Classroom 4 | TS Toddler | 11 | 2 |
| **Total:** | | | **30** | **7** |

Prior to data collection, an information video and information and consent letters were distributed to the parents/guardians of the children in the participating classrooms (Appendix B) and to the participating educators (Appendix C). To ensure genuine child participation in this study, I followed Lansdown's (2011) basic requirements for effective and ethical participation which includes the following principles: transparent and informative, voluntary, respectful, relevant, facilitated with child-friendly environments and working methods, inclusive and safe, supported by training, and sensitive to risk (Lansdown, 2011). This research study relied on a mix of purposive and convenience sampling to select the participants. Purposive sampling was used to select the toddler classrooms and their educators in consultation with the Director.

Convenience sampling was used to include participants who were available or who were willing to participate in the research (Johnson & Christensen, 2012). Parents/guardians from each of the four classrooms provided full consent as did the educators. A copy of the consent letters can be found at the end of the information letters in in Appendix B & C.

**Research Procedure**

The research procedure for this study was adapted to support the COVID-19 research regulations instituted by Lakehead University in the Summer of 2021. Prior to the video recording and through-the-window observations of the four classroom settings, I met with each educator individually via Zoom to conduct educator semi-structured interviews (see Appendix D for a list of questions). A copy of the interview questions was sent to each educator ahead of time which allowed them time to review what would be discussed and also to prepare some responses ahead of time. The director of the child-care center graciously allowed each educator one hour away from the classroom to complete the interview during their working hours. During this interview, I asked the educators questions about their pedagogy as well as how they support the children in their room while they are developing, testing, and/or confirming their ideas. The interview was structured like a conversation and the educators were able to skip over any questions they did not wish to answer. The educators answered all questions to some capacity. None of them opted to skip or declined to answer any of the interview questions. The Zoom interviews were recorded and transcribed using the Zoom software transcription function to allow for a deeper data analysis later.

The fieldwork portion of the study consisted of nine visits to the selected sites over the span of five weeks. A detailed breakdown of the research schedule is included in Table 3.4. To ensure a child-centered approach was being fostered, the through-the-window observations and

video-based observations were collected during a large block of free exploration time. Each visit lasted one hour and included both through-the-window observations, and video-based recordings from inside the classroom using preinstalled GoPro cameras. Parent/guardians from all four classrooms provided full consent for the children to participate in the research study and to be video recorded in the classroom setting which allowed me to position the two GoPro cameras so that they spanned the whole room during the observation recording. The video-based recordings were reviewed several times later to follow each individual child as they moved throughout the room and engaged with the materials and their peers/educators for one hour using a running record format. A total of 30 hours of video were transcribed, following each of the children for one hour. The through-the-window observations focused mainly on sketching a blueprint of each classroom, recording the provided materials in the room, as well as taking note of any interactions that stood out in connection to the research questions.

To introduce the research to the children prior to video recording in the classroom, a pre-recorded video was played for the children to briefly introduce myself and give a description of why I was there (outside the window) and what I hoped to achieve during the observations. This was completed prior to my arrival, and on each day of recording in the individual rooms.

Table 3.4 below outlines the weekly research schedule.

**Table 3.4**

*Weekly Research Schedule*

| **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
|---|---|---|---|---|
| JUNE 21 | 22<br>PM meet @ LS & TS- Drop off equipment, pick up consent forms, Outdoor visits to both centers | 23 | 24<br>TS- Sr Infant | 25 |
| 28 | 29<br>LS- JR Toddler | 30 | JULY 1<br>TS- Sr Infant | 2 |

| | | | | |
|---|---|---|---|---|
| 5 | 6<br>LS- SR Toddler | 7 | 8<br>TS- Toddler | 9 |
| 12 | 13<br>LS- SR Toddler | 14 | 15<br>TS- Toddler | 16 |
| 19 | 20<br>PM meet @ LS & TS-<br>Outdoor Visit to both sites to thank the students and educators and share a small gift of appreciation | 21 | 22 | 23 |

**Data Collection Methods**

The three methods used in this study, educators' interviews, researcher observations, and video recordings uncovered the children's organic interactions in the learning environment.

**Educator Interviews.** Educator interviews took place prior to the through-the-window classroom observational visits using the Zoom video conferencing platform. It is important to capture adult perspectives in the study to empower and value their perspectives (Clark, 2017). Gathering both adult perspectives and children's learning supports a holistic dialogue about children's lives (Clark, 2017). During the educator interviews, the researcher asked questions about the organization of their day, their pedagogy, the classroom environment, and the materials they include in the room to support the children (See Appendix D). The questions for the interview were created in consultation with a teacher survey developed by Rivkin (2014) which looked at the level of adherence Reggio inspired programs had to the original programs in Reggio, Italy. The survey looked at six different categories in connection to Reggio philosophy: the role of symbolic languages in child development, *progettazione*, role of a teacher, environment as the third teacher, documentation as a multi-faceted tool, and families and communities as partners. When developing the interview questions for this research study, I used the topics important to Reggio inspired practice as identified by Rivkin (2014) to support a

robust conversation and connection to Reggio inspired practice in this study. As mentioned previously, the interviews took place during the educators' working hours, and they were sent the interview questions ahead of time to allow them to prepare for the conversation. The interview set the stage for observations of the classroom because it provided a snapshot of what could be expected when observing from the classroom windows. For example, when sharing about their classroom environment and the materials they include in the room during the Zoom interview, I was able to make deeper connections to what I observed during the through the window observations because I had prior knowledge of some of the items the educators choose to share.

**Observations.** The observations recorded as field notes described the classroom environment and included materials, interactions between the children and educators, as well as significant moments that happened throughout the visit. During the through-the-window observations, I sketched an outline of each classroom in my field notes and all of the materials available in the room were listed as observed by the researcher from the window (see figures 4.12- 4.14 below for sketches and material lists). During my observations, I took note of significant moments that unfolded. Some examples of these moments included the educator provoked/supported experiences at the wind tunnel, projector painting, and water exploration (described in detail in Chapter 4). Other notable moments included the engaging responses of adults upon the children's arrival, reciprocal interactions, new materials added to the setting, and examples of children interacting with materials in new or different ways than intended. These observations complement the video-based observation of the children by providing context to what is happening in the room while the video recording of the children is happening. I would often refer to my notes while reviewing the video-based observations to help guide my analysis.

**Video-based Observation.** This research study used video recordings as a form of data collection in the classroom settings. Two GoPro cameras were pre-installed in the early learning classrooms and observations and recordings took place simultaneously while the researcher viewed from outside the classroom windows. The video recordings captured the children exploring the room as they were creating, testing, and confirming their ideas about the world around them, allowing the researcher a broader range of observation across many children. Ukkonen-Mikkola and Ferreira (2020) discuss that video analysis can be used as a main source of data to understand young children's learning as well as a method to uncover a child's perspective. By using video observation as a tool with toddler-aged children, a researcher can observe elements such as behaviour, actions, dynamics, materials, and dialogue (Ukkonen-Mikkola and Ferreira, 2020). The video observations in this study allowed for an in-depth analysis of each child as an individual and how their behaviour, actions, peer dynamics, choice of materials, and dialogue were situated in the context of the whole classroom.

Loizos (2008) states that video recording as a method becomes necessary when the actions being observed are too complex to be comprehensively described by an observer as they unfold, such as children's play in the classroom. The video-based observation method "provides very detailed data that can be reused and re-analysed from different points of view" (Ukkonen-Mikkola and Ferreira, 2020, p. 7-8). An advantage to this type of data collection is that the researcher can permanently capture an event, and then continuously review it to ensure all actions and interactions are recorded (Mukherji & Albon, 2018). An additional advantage to using video observation is that the tool records not only the spoken word, but also non-verbal communication, such as body language and facial expressions (Mukherji & Albon, 2018). Video-based observation fits well with this study because it supported the recording of the

children's organic interactions while also giving the researcher time to review the data at a deeper level to obtain an understanding of the children's ideas and how they are expressing them. Sumsion et al. (2011) used video recording data collection methods to examine infants' perspectives on their child-care in an adapted research study using the Mosaic approach as a foundation. The video recording tool allowed the infants to speak in non-verbal ways while allowing the researchers to view what the infant attended to as part of the research design (Sumsion et al, 2011). Video recording the children supported the researcher's observations of the children's natural curiosity and gave them the ability to reflect on the video data and document what each individual child was doing, saying, exploring, etc., in an effort to uncover their understandings.

**Data Analysis**

In qualitative studies, data collection aims to reveal patterns in the information collected to develop a deeper understanding of the research topic (Mukherji & Albon, 2018). The data collected during this study was analyzed using inductive reasoning following the stages outlined by Denscombe (2014). Inductive reasoning guides the researcher to analyze the data collected moving from specific observations to a broader generalization and theory (Thorne, 2000). The first stage included exploring the data and becoming thoroughly familiar with the information that was presented (Denscombe, 2014). I engaged in this step by carefully reviewing the transcribed video data from the educator interviews and reviewed the classroom video recordings and the through-the-window observations written as field notes. The educator interviews were recorded on the Zoom platform which automatically generated a written transcription of the interactions. Seven hours of video recordings were reviewed to follow each of the 30 children for one hour as they interacted in their classroom environment. Running record notes were recorded

in detail during the one-hour video-based observations of each child. The use of the running record note-taking method is an open-ended observation which focuses on just the facts, what is seen and what is heard, and records the events in an observation as they unfold (Martin, 2019). Running record notes are detailed, including facial expressions, gestures, movements, postures, etc., and are written in an objective manner, attempting to remove assumptions and bias (Martin, 2019). This requires the writer to review their running record notes to remove subjectivity and address significant bias which can be done by recording just the facts presented in the observation, what the observer can see and hear (Martin, 2019). The through-the-window observations recorded as field notes were scanned and uploaded to a Microsoft Word document on a computer. All data was then uploaded to a computer-assisted qualitative analysis program, ATLAS-ti. This program was used to support the qualitative analysis of the data collected.

The next step included coding the data by looking at themes and commonalities and creating categories (Denscombe, 2014). While reading through the transcribed educator interview data, running record observations of the video-based recordings of the children, and the scanned field notes, common themes were coded and categorized as they emerged. For example, the different materials that are used in the explorations were coded and categorized along with the children's expressions, and interactions with their peers and educators. The ideas children explored during their play were coded into categories that unfolded as the data was analyzed.

The next step included organizing the codes to see which codes fit together and identifying themes and relationships among the codes (Denscombe, 2014). I looked for broad themes that emerged and possible underlying meanings found from the responses. A theme that appeared during this process was the children's use of repetitive motions while engaging with

their learning environment. The children's repetitive motions made several connections to eight common play schemas observed in children: enveloping, positioning, trajectory, connecting, orientation, transporting, enclosing, and rotation. These schemas were used to support my interpretation of the children's ideas and to organize the codes and to explore deeper meanings. The final step included developing concepts and arriving at possible generalized theories (Denscombe, 2014). At this point, the themes were organized to support each of the research questions and to make connections to the literature. I looked for evidence from my findings to make possible generalized statements or conclusions based on the data presented.

**Ethics, Validity, and Reliability**

The ethical approval for this study began with acceptance from the Lakehead University Research Ethics Board, which conforms to the standards of the *Canadian Tri-Council Research Ethics* guidelines (TCPS2, 2018). After approval, an informational video made in conjunction with the researcher, the Director of the program, and the Community Pedagogist, was sent out to the families of toddler-aged children at the child-care setting. The informational video was used to share information about the study, and to help connect the researcher and the families in a time where face-to-face interactions were not permitted. The short-recorded video discussed the major elements of the study, including: a brief overview of the research rationale, explanation of the research process, description of the research methods, and information on how the research will be introduced to the children on the day of video-based observation in their classroom. In conjunction with the informational video, information and consent letters were sent to the families of the toddler-aged children and the educators in the participating classrooms. The information and consent letters were developed to outline and describe the study to parents/guardians and the educators, asking for consent to partake in the study (see Appendices

C and D). Full consent was collected from each parent/guardian of the children in all four of the classrooms prior to data collection. On the day of observations, prior to video recording in the classroom, a pre-recorded video was played for the children to briefly introduce the researcher and give a description of their role and what they hoped to achieve while observing them through their classroom windows. Since the researcher was removed physically from the room, they wanted to ensure that all the participants were aware of why the researcher was outside the window observing them.

In qualitative work, concerns about reliability and validity are embedded throughout the entire study and are interwoven in the design of the study as well as in the data collection methods (Goodwin & Goodwin, 1996). The reliability of a study refers to the overall reproducibility of the research project and can be enhanced through a careful and thorough explanation of the following concepts described by Goodwin & Goodwin (1996):

- the role of the researcher, including the research's relationship with the study participants
- the sampling strategy and choice of informants
- the particular social, physical, and interpersonal context and settings studied
- the definitions of key concepts or constructs guiding the study
- the data collection and analysis approaches used (p. 139).

The validity of a study stems from the accuracy of the research findings and whether the study measures what it intended to measure, and is closely connected to reliability, as threats to reliability also threaten the validity of the study (Goodwin & Goodwin, 1996). The validity of this research study was enhanced through crystallization. Ellingson (2009) describes "scholars who embrace a wide range of methods, practices, and perspectives can adapt crystallization to their needs and goals" (pg. 4). Crystallization combines approaches within a research study to support its credibility (Ellingson, 2009). The unique methods in this study, including through-

the-window observation field notes, video-based observations, and educator ZOOM interviews, in addition to the researchers' background and perspectives, contributed to assessing crystallization within the study and added credibility to the results.

**Gift of Appreciation**

As a thank you for their participation in the study, a floor book gift package was given to each of the participating classrooms as a thank you after the observations were complete. A floor book is a large book that can be placed on the floor for children to flip through and is a form of pedagogical documentation that can be created alongside the children (Warden, 2015). It is used because it allows for the educators and children to review and reflect on prior learning together in an easy-to-use format. The floor book was not part of the data collection for this study due to COVID-19 restrictions at the time of collection. The package contained a large floor book, markers/crayons/ pencil crayons, glue, different sized pieces of paper, and a letter explaining floor books and their use as pedagogical documentation (Appendix E). Their finished product was for them to keep and cherish and was not used in the data collection or summary of the study. The educators were encouraged to add pictures or documentation they may have collected as a class during the time the research was taking place to support their floor book exploration. Clark (2017) describes the book making process as a part of the Mosaic approach to listening to young children and supports the process as a platform for further reflection with the children. The thank you floor book will be titled *Explorations in our Classroom- A Representation of the Hundred Languages of Children.* In addition to the floor book, a copy of the final research study was offered to the parents/guardians, educators, and the Director at the research site (pending).

# Chapter 4: Research Findings and Discussion

The objective of this study was to explore what children are saying, doing, and representing while developing ideas about their worlds and how their educators are supporting them in their development. To document children's developing ideas and how their educators are supporting them, several data collection methods were used. Educator interviews, through-the-window observations, and video-based classroom recordings were used to collect data on the children and educators and their interactions in the classrooms. This chapter addresses the following research questions in relation to the data collected:

1. What are the ideas that children are generating, testing, and/or confirming in a Reggio inspired learning environment?
    - In which ways might children be generating, testing, and/or confirming these ideas?
2. How are educators fostering children's development of their ideas in a Reggio inspired learning environment?

## What are the ideas that children are generating, testing, and/or confirming in a Reggio inspired learning environment?

While reviewing the video-based recordings and creating the individual running records of each child, there were many instances where the children would engage in repetitive actions throughout the hour-long observation. For example, I observed a child placing a box over her head at the beginning of the observation, then placing a cardboard cut out over her head further along, followed by a plastic storage tray up over her head as well. These types of repeated actions entail the children engaging in different play schemas as they try to figure out how things work. In this example, the child was working in the enveloping schema, trying to cover and hide

their head, and showing connections to their understanding of height and knowledge in connection to their body parts. Louis, Beswick, Magraw and, Hayes (2013) describe that "schematic play experiences help children to represent their thoughts, feeling and ideas symbolically (p. 47). They use these repeated actions to link to previous experiences and to practice, remember, and organize their ideas (Louis et al., 2013). Athey (2007) explains that these early, repetitive behaviours are precursors for the larger concepts children will be learning later in life, such as mapping and aspects of mathematics and science. Curtis and Jaboneta (2019) describe that the repetitive actions and active play opportunities that emerge during schema development supports healthy brain development in young children. While reviewing the video-based observations and following each child through the learning environment for one hour, there were eight schemas which surfaced across the children and learning environments: enveloping, positioning, trajectory, connecting, orientation, transporting, enclosing, and rotation. The process of identifying which schema the child was working in included referencing the repeated observations to the definitions of each of the eight schemas presented by Louis, Beswick, Magraw, and Hayes (2013) to find the best fit. In the paragraphs below I will highlight observations in the form of short vignettes in each of the eight schemas in connection to the ideas that the children were exploring. Each vignette is labelled with the idea(s) the child is working on in the observation. Table 4.1 outlines the eight schemas', the ideas the children are testing/generating/confirming, and the materials or vessel being used and can be located at the end of the 27 vignettes.

**Enveloping.**

In the enveloping schema, children are often seen covering themselves or objects with all sorts of materials; they are also interested in filling bags, baskets, and containers with bits and

pieces (Louis et al. 2013). Curtis and Jaboneta (2019) describe that in their investigations, it would have been impossible to count the number of times children were observed filling cups, bowls, purses, etc. with nearby objects. The children in the present study were interested in placing boxes/objects over their heads, placing loose parts in boxes, taking things out of boxes, placing loose parts in bowls/plates/containers, taking markers in and out of a bin, and finally covering themselves and other objects with cloth materials. Below are running record excerpts highlighting the children working in the enveloping schema and the different ideas they were generating, testing, and/or confirming while engaging in the repetitive behaviours.

**Vignette #1- Spatial awareness**

One of the children was fascinated with watching their peers interacting with the diaper boxes in the room. She observed them placing the diaper boxes over their heads and then located a box to place over her own head. Once she enveloped her head under the box, she would bring it back up over her head to peak out while moving around the room and lift the flap to peek at the educator outside of the box (see the running record excerpt below of how the interaction unraveled).

> Standing at the back of the room staring at the other children playing with boxes, she then walks around the round table and takes a diaper box and puts it over her head. She then turns around in a circle looking over at the teacher. The box drops. She picks it back up and puts it over her head with two hands holding the flaps. Turning around, she lifts the box up, looks at the teacher, and then pulls the box back down. She lifts the box again, looking through the flap, pushes the box off her head onto the floor and stands and watches two of the other students with the boxes over their heads.

In this exploration of the enveloping schema, the child was exploring the ideas of spatial awareness as she moved her body around the room with the box over her head. She lifted the box several times for a clearer line of vision. She was also using this experience to connect with her educator, lifting the flap up and down in response to the educator lifting the flap as well. The educator would interact with the child by saying things such as “I see you!”, and “There you are!” and the child would face them and smile in response. This meaningful interaction with their educator supports the overall foundation of Expression as described in the *How Does Learning Happen?* (HDLH) Ontario’s pedagogy for the early years (Ontario Ministry of Education, 2014). Educators support the foundation of expression through viewing the child as a capable communicator and supporting expression in all forms (Ontario Ministry of Education, 2014), as evident through the meaningful reciprocal interaction between educator and child.

**Vignette #2- Capacity**

The diaper boxes were also used to envelop and contain items inside. In one example, a child collects loose parts off the table, walks over to the carboard box on the floor, removes items from the box and then places the selected loose parts inside the box.

> At the table he reaches for more loose parts, corks and feathers, picks them up and walks over to the cardboard box that's on the floor in the middle of the room. He takes the cardboard pieces out of the cardboard box and throws them on the floor beside the box. He then bends over, reaching in for more cardboard pieces. Once all the cardboard pieces are out of the box, he places the corks and feathers that he collected from the table into the box and then picks the box up with two hands and walks over towards the cushion in the corner of the room.

In this example, the child is combining several of the play schemas into one fluid interaction. He is using the carboard box to envelop items inside. He is engaging the trajectory schema (described in detail below) while emptying the box of the previous items and throwing them on the floor, and finally he is using the box as a vehicle to move the new loose part items, which engages the transporting schema. This example showcases how play schemas can be used simultaneously to support a child exploring and testing their ideas (Nutbrown, 2011). More specifically, in this example, the child is working with the idea of capacity by removing items from the box to fill it up with new items. Nutbrown (2011) speaks to the idea of children exploring the concept of capacity using the enveloping schema and explains that by using materials, children can explore the ideas of capacity and volume by enveloping and containing objects in spaces.

**Vignette # 3- Hand-eye coordination/pincer grasp**

In the following example a child engaged in the enveloping schema is using tweezers to move and contain items into a bowl (See figure 4.1 below for an image of the materials). The running record excerpt below describes how one child used the repetitive motion of moving items into a bowl, exploring the use of tweezers to aid in the exploration.

> He continues to take feathers off the table using his left hand and the tweezers in his right hand and places them into the bowl in front of him. Focusing and looking down at the bowl, he is watching the feathers going in. He continues to practice with the tweezers, switching them into the left hand and using his right hand to place the material into the tweezer's, squeezing his fingers and moving the loose part into the bowl. He switches the tweezers back to his right hand, using the left hand to pick up the feather and places it

into the tweezer. Squeezing with his right hand, he places the feather into the metal bowl in front of him again.

In this example, the child was expanding his enveloping schema while working towards developing his pincer grasp and hand eye coordination. The skill of the pincer grasp falls under the fine motor domain which can be observed in the Toddler age group (14 months to 3 years of age) as described in the Early Learning for Every Child Today (ELECT) document (Best Start Expert Panel on Early Learning, 2007). Each time he squeezed the tweezers around the feather and then moved the feather into the bowl, he was practicing the pincer grasp motion (using fingers to pinch an object) and also using eye-hand coordination to get the feather into the bowl.

**Figure 4.1**

*Tweezers, metal bowl, and feathers used in enveloping schema example.*

**Vignette # 4- Sharing with a friend**

The running record excerpt below is an example of how a child is engaging in the enveloping schema while dumping and replacing markers in an open container. He uses the markers to connect with a peer by handing them markers to use while colouring at the table.

> He then tips the whole bucket of markers over in front of him and says, "Uh oh". The educator comes over and says, "Let's put all the markers back in the bucket", he takes two fistfuls then places them into the bucket. He then goes back to the markers on the floor, takes another two full fistfuls and places them in. He picks up the bucket of markers, walks over to the table, and shows them to the educator, who says, "Oh well thank you," and places them on the table. He sits back down in his chair, puts his hand into the marker bucket, takes out one marker, and passes it to his friend who is sitting next to him. She grabs it and smiles. He grabs another marker out of the bucket, holds it up to her with a big smile on his face, and laughs. She takes it and holds it in her hands. The educator says, "Are you sharing?" and he reaches into the bucket grabs another marker and passes it over to his peer while giggling.

During these interactions, the child is engaging in the repetitive motion of enveloping markers in a container and removing them while working on the idea of sharing with a friend. He would reach into the container and remove a marker and hand it over to his friend. Both showed enjoyment throughout the interaction with smiles on their faces. This occurred three times, and the educator named the learning for the children by saying "Are you sharing?".

**Vignette # 5- Covering objects/themselves**

Another example of children exploring the enveloping schema is by covering themselves and objects with materials. The running record below describes how one child used an orange

scarf to cover her body and three baby dolls. She then took the scarf and placed it up over her head (See figures 4.2 & 4.3) while looking around the room.

> She goes back to the table and rearranges the babies closer together. She then picks up the orange scarf and sits down beside the babies. She uses the scarf to cover her legs and then covers the babies with the scarf (see figure #). She then puts both hands on the window to stand up and then places the scarf up over her head. She pulls the scarf back down and looks out into the classroom holding the scarf in both hands.

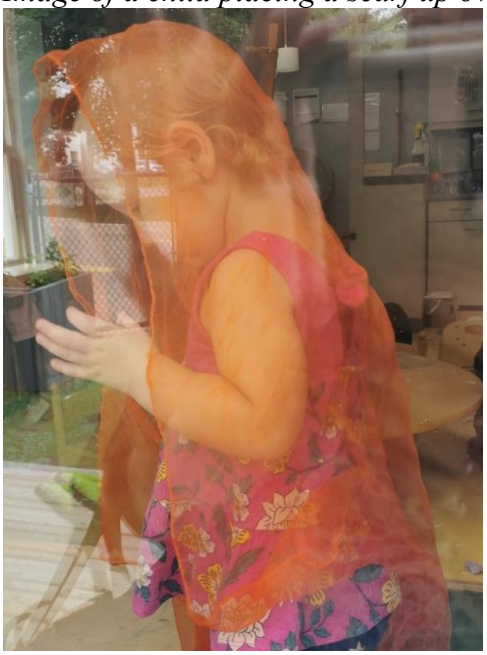
In this example, the child is exploring two related ideas, covering over objects, and covering up themselves (Louis et al., 2013). In this example, this envelopment had a function as described by Athey (2007). The child wrapped the babies as well as her legs and head to envelop them. The child could also be exploring ideas such as hiding and concealing both themselves and other objects, such as the pretend babies in this case. The child was showing notions of nurturing the pretend babies by pulling them close and covering them in the scarf which was used as a blanket.

**Figure 4.2**

*Image of a child using a scarf to cover themselves and pretend babies*

**Figure 4.3**

*Image of a child placing a scarf up over their head*



**Trajectory.**

In the trajectory schema, children show interest in how people and objects move, which includes how the children can affect the movement such as dropping or throwing objects or using their bodies to jump or swing (Louis et al. 2013). Children are exhilarated when launching themselves through the air and find endless ways to propel their bodies and objects in the learning environment (Curtis & Jaboneta, 2019). The children were interested in pushing loose parts off tables, throwing objects into the air, and exploring how different materials would fly into the air using a wind tunnel contraption. Below are running record excerpts showcasing the children working in the trajectory schema and the different ideas they were generating, testing and/or confirming while engaging in the repetitive movement behaviours**.**

**Vignette # 6- Horizontal vs vertical movements with control**

In the running record example below, a description of how a child uses an object to push items off a table, replaces them, and then pushes them off again is provided.

She turns around and picks up the mop again. She then brings it to the table and puts the head of the mop into the butterfly organizer. She brings the tray closer to her and picks it up with her right hand. She now has the mop in her left hand and the butterfly organizer in her right hand and then dumps the loose parts out of the organizer onto the table and drops the butterfly organizer onto the floor. She then brings the mop head back to the table and starts using it to push all the objects off of the table onto the floor. When all the objects are off the table, she bends over, picks up one small item, places it back on the table, then uses the mop to push it off again.

This child is using the trajectory schema to practice using horizontal movements with a mop. She pushes the mop across the table and forces all the items off and on to the floor. She then repeats this practice by picking up some of the items, returning them to the table, and then using the mop to push them off again. Prior to this running record example, this child was redirected by the educator three times to keep the mop on the floor using horizontal movements, rather than swinging it into the air using vertical movements. This redirection from the educator ensured the safety of all the members in the room while they worked on using the material with control. The educator scaffolded the learning by modeling how to use the mop for the child by going hand-over-hand and showing her how to push the mop horizontally on the ground. In this example, the child is practicing this new skill, and using controlled horizontal movements with the mop.

**Vignette # 7- Balancing: on a platform**

In the next running record example, the child is using the trajectory schema while exploring the idea of balancing an object on top of another object.

The educator hands her a leaf looking piece of cardboard cut-out and places a wooden circle on top of it. The circle falls off and the educator says, “What about here?”, and then

places it back on the cut-out. The girl smiles and bends over to pick up the wooden circle that fell off. The educator mimics her reaction and says, “Haha, oh my goodness, can it not balance? It just keeps falling!”. The girl then places the wooden circle on the cardboard on the ground while sitting. She lifts the cardboard, and the piece falls off again. She then stands up with the cardboard in her right hand, looks at the educator and then throws the cardboard up in the air as it falls to the ground. She bends over again, picks up the wooden circle and puts it back on the cardboard. She then flings it in the air and screeches with a smile on her face. She puts the cardboard back on the ground and sits on her bottom, looks at the educator, smiles, puts the wooden circle on the cardboard, and repeats it again by standing up, swinging the wooden circle off and shrieking with a smile on her face.

During this interaction, the child and educator are working as a team and are exploring the idea of balancing. The educator challenges the child by handing them a cardboard cut out with a small object on top. When the object falls to the ground, the educator entices them to try to balance it again by placing the object in another spot. The child then takes lead of the exploration and starts to purposefully fling the object into the air. This requires a great skill of balancing because the child must place the object onto the carboard on their own, then use their arm movements and balance to fling it into the air before the piece rolls off the side.

The next two running record examples took place while the children were engaging in a large group exploration using a wind tunnel. The wind tunnel (see figure # 4.4) is a large apparatus which has a fan connected to a large tube and was used to “fly” different types of paper in the air. The wind tunnel apparatus really helped support the exploration of the trajectory

schema in the classroom. Below are running record excerpts of how two children tested different ideas using the trajectory schema.

**Figure 4.4**

*Wind tunnel apparatus brought in for a large group exploration*

**Vignette #8- Tracking an object**

This first example displays a child using the wind tunnel to fly different types of paper into the air. The child would follow the paper as it shot through the tunnel and then floated down to the ground. The child would then try and catch the paper before it hit the ground and was successful with most of the attempts.

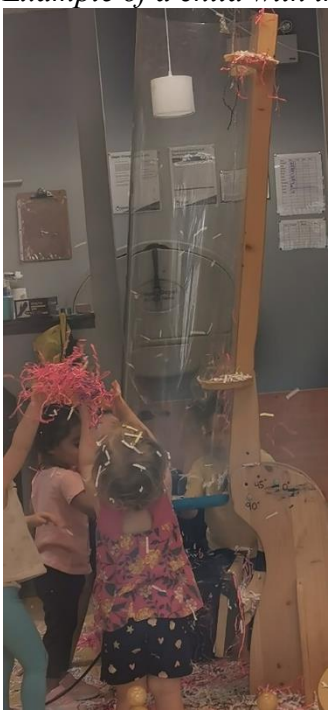
She picked up a ball of shredded paper and put it up over the fan in the tunnel. The paper flew up out of the top of the tunnel and fell over top of her. She reached up and caught it before it hit the ground. She smiles and puts it back over the fan to fly up again. She

watches the paper come out of the end and it flies over her head, falling just behind her. She bends over, picks it up and puts it back over the fan. This time it flies up into the air and falls on the other side of the wind tunnel. She quickly moves her body over and catches it before it hits the ground. She continues to do this several times, putting the tissue over the wind tunnel while watching it fly out of the top, standing there holding her hands up high trying to catch it (See image of this in Figure #4.5 below).

In this example the child was working towards confirming the skill of tracking an object. Athey (2007) describes that tracking supports children in building knowledge of the movement aspects of objects. Louis et al. (2013) describe that the trajectory schema can involve children following vertical movements of objects in connection of tracking and trial and error. This child was confirming the idea of tracking by following the paper as it flew out of the tunnel and then moving her body to follow the direction of where the paper was headed.

**Figure 4.5**

*Example of a child with their hands up in the air catching a ball of shredded paper*



**Vignette # 9- Coordination/Real-life Connection- Snow**

In the next example, the child is using their own body movements to practice the trajectory schema in three different ways. The first way is by using their stationary fingers to release the paper and watch it fall to the ground. The second way is by throwing shredded paper into the air, and the third way is by using their body to vertically jump into the air.

> She picks up two handfuls of shredded paper and sprinkles them on the floor while watching her fingers moving back-and-forth. She then goes back to the table to pick up more and then uses her fingers to sprinkle shredded paper down on the floor in front of her. She then takes a handful of paper and throws it up in the air while jumping up and down. The educator says, “you're jumping!”. She picks up another handful of paper and throws it up in the air again. The educator says, “it's snowing!”. She responds by smiling and then jumps up and down again and picks up another handful of paper. She smiles again while she throws it up in the air and says, “oh”. She takes another handful, faces the educator, and throws it up in the air.

In this interaction, the educator is supporting the child by naming and extending the learning that is happening. When the child starts to sprinkle the shredded paper between her fingers, the educator connects this movement to the idea of snow falling from the sky to extend their thinking and connect it to a real-life example. The educator also noticed and named the child using their body to jump vertically in the air. The child was exploring the idea of coordination as she moved her body to jump into the air while throwing the paper up around her.

**Positioning.**

In the positioning schema, children are interested in exploring the position of both materials and themselves.  Young children enjoy sorting and classifying objects, and they will notice their

similarities and differences (Curtis & Jaboneta, 2019). They line things up in patterns or rows, either on top, beside, behind, or carefully around each other (Louis et al, 2013). In this research study, the children were observed lining up loose parts, stacking varied materials on top of each other, and carefully positioning items on larger props. The running record excerpts below display the children working in the positioning schema while expanding their ideas about the world around them.

**Vignette #10- Horizontal and Vertical lines**

The following example displays a child working in the connecting schema by both lining up items as well as attempting to stack the same items. She is also observed positioning the items close to her face and looking at them intently prior to lining them up and stacking them.

> She then goes to the white round table and picks up two corks, one in each hand, and brings them to the table in front of the window. She brings her face close, looking at the corks, and pushes them together. She then heads back over to the table, looking at the corks very closely in front of her eyes. She reaches across the table and drops the corks. She picks up another cork, turns around and brings it back to the table in front of the window. She turns back around and heads back to the round table, collects another cork and turns back towards the table in front of the window. She places the corks down in a line across the table. She then tries to stack one of the corks on top of another and when it falls, she laughs. The educator looks at the corks and responds, “wow you have a collection!”.

The child is engaging in the connecting schema while developing knowledge surrounding the idea of vertical and horizontal lines. She first lines the corks up horizontally, while pushing the corks together and retrieving more corks to add to the collection. She then takes the corks and

attempts to line them up vertically, one on top of the other. When the corks fall, she laughs, and looks to the educator for her reactions. The educator responds by labelling that she has a collection of corks.

**Vignette #11- Balance-Cork stacking/Perseverance**

In the next example, the child is also exploring the vertical concept of connecting by attempting to stack corks as well. What is different about this example is that when he stacks the corks and they fall, he then attempts to stack them again, this time successfully. He takes it upon himself to knock the materials over.

> He reaches into the butterfly storage container and pulls out two corks, one in each hand. He then takes a third cork, holding two in his left hand and places one down on the table. He takes a cork from his left hand and balances it on top of the cork on the table. He then reaches over with his right hand and places the third cork on top and then they all fall over. He quickly stacks all three of the corks up again using his left hand and then with both hands he pushes them off the table and smiles and squeals three times.

In this example, the child is working with the ideas of balance and perseverance. When his first attempt was unsuccessful, he picks the same materials back up and tries again. In the second attempt he is successful in balancing the corks and decides on his own to knock the corks over.

**Vignette #12- Problem Solving/Capacity/Balance**

This last example reveals a child who is working carefully in the positioning schema while trying to place manipulatives on a tree stand (See figure # 4.6 for an image of the colourful plastic star loose parts and the tree stand). When one of the branches becomes full, the child is observed moving the items to another branch.

> He then looks over and sees the educator playing with loose parts at the table by the window. He drops the broom and picks up the loose parts that she's playing with, which are plastic star looking pieces and she is placing them on a tree stand. He continues to look for loose parts that are similar and places them on different branches of the tree stand. He reaches into a nearby box and pulls out more of the loose parts and continues to position them on the tree branches. A tree branch becomes full, and he cannot fit one on. He takes it off and places it on another branch. This happens on another branch, and he takes one of the stars off and begins to place it on a branch that is also full. He was able to balance it on the very tip.

In this example, the child is working with ideas connected to problem solving, capacity, and balance. When the branch becomes full, the child uses problem solving skills and removes the last manipulative and places it on another branch. The child was able to judge the capacity of the branch and make an informed decision that the branch capacity was full and that he needed to find a branch with more room for the manipulative. Finally, the child explored the idea of balance when he positioned a manipulative on the tip of a branch and held it in place until it was able to stay upright on its own.

**Figure 4.6**

*Picture with an example of the colourful plastic star manipulatives and the tree stand.*

**Connecting.**

Children exploring the connecting schema are interested in the way things will join together and are often engaged in actions such as fastening things with rope, string, tape, staples, or glue (Louis et al. 2013). They are interested in exploring the relationships between materials and how they can be linked together or taken apart (Curtis & Jaboneta, 2019). Observations of children exploring the connecting schema in this study included the children linking and disconnecting different loose parts and manipulatives, connecting plastic covers on LED lights, and joining together paper clips. During the repetitive actions of connecting and disconnecting materials, the children were making connections and developing knowledge to support their ideas about the world around them. The running record examples below exhibit these connections and expand on the knowledgebase the children were generating, testing and/or confirming.

**Vignette #13- Listening to learn a new skill**

This first example is slightly longer and displays the process a child took, in connection with their educator, while attempting to connect manipulatives which were tricky for them. The educator in this example supports the child by modelling how to connect the manipulative in several different ways, and then cheers them on while he continues to use the different strategies attempted.

> In front of the table by the window, he then starts to play with the star shaped loose parts, taking one in his right hand and one in his left hand, pushing them together to try and connect them. When he is unsuccessful, he looks up to the teacher and says, “not working”. The teacher responds, “you have to push really hard”. He attempts to push them together and is successful with the teacher's hand over hand support. He then grabs a third star and holds it up to the teacher and she responds, “You try” and he attempts to push the loose parts together. While trying to push them together the teacher says, “Good trying, wonderful trying!” He is unable to get them together and the teacher then says, “Let me show you.” She then pushes them together and shows him how they can connect a different way. He then takes the pushed together loose parts and tries to push the two sets together to make a total of 4. He points up to the teacher and asks for help. She models for him using another set of loose parts and explains “You poke them through the hole”. He then pushes them together and pokes them through the hole. The teacher responds “Wonderful, look now they're attached a different way. If you want to get them out, you have to pull super hard”. The boy then pulls all 4 parts hard and disconnects them. After disconnecting them he then puts them down on the table and starts stacking

them on top of each other. The teacher says, “Oh you're stacking them, that's a good idea”. He then walks away.

In this example the child is working in the connecting schema while developing ideas of listening to learn the new skill of connecting star-like manipulatives. After many unsuccessful attempts, the child was struggling to link the manipulatives together. The educator responded calmy and supportively, giving him different strategies to try. The child was able to watch the educator model different approaches and follow her direction to finally become successful in connecting the pieces. What is interesting in this example, is that once the child was successful in connecting the manipulatives, he then disconnected them and started to stack them one on top of each other. This makes me wonder, after working to generate a new schema, did it feel comfortable for the child to return to a previous already generated schema?

**Vignette #14- Beading/Size- bigger and smaller**

This running record except describes the process a child takes while connecting wooden beads together on a plastic wire (See figure #4.7) below for an example of the plastic wire and wooden beads).

She continues to use a piece of plastic wire and pushes it into a large bead. She reaches back into the container picking up a different sized bead and holds it close to her face, turns it around with her right hand and places it back into the container. She takes another bead out of the container and tries to put the wire through the middle. The educator responds, “Oh that is larger, that is a larger wooden circle”. For several minutes she sits at the table pushing the wire into wooden blocks and then pulling the block down the wire. When there is a total of five blocks on the wire she reaches over and pushes the stringed beads towards a peer at the other end of the table.

While working in the connecting schema, the child worked on mastering the idea of beading, as well as working with ideas supporting size. Using hand eye coordination to string beads is an indicator that a child has mastered the skill of sensory motor integration as described in the ELECT document (Best Start Expert Panel on Early Learning, 2007). While beading the child showed knowledge of knowing how the wire needed to go through the bead, and that the bead needed to be pushed down to make room for more beads to fit. The child was also observed selecting the wooden beads based on size, knowing that the smaller bead would not fit on the wire by simply looking at it. She then placed it back into the container and selected a larger bead to string instead.

**Vignette #15- Disconnecting materials**

In this last example of the connecting schema, the child is exploring the idea of disconnecting already connected items. Louis et al (2013) describe that as a child evolves in the connecting schema, they start to work with the idea of disconnecting and separating items. The child in this example is working with large paper clips (see image # 4.7 below for an example).

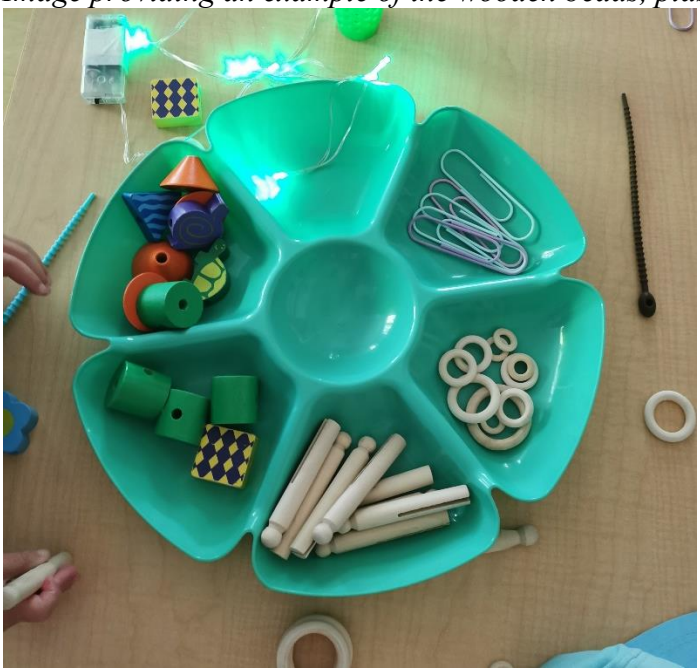
> Walking back to the table, he picks up a chain of metal paper clips that are stuck together. He holds them up in front him and attempts to pull them apart. When he is unsuccessful, he walks over to the educator and hands them to her. She slides them out so that they are separate and hands them back to him. He walks back over to the round circle storage container and grabs another paper clip. He pushes two of them together to form a chain. He then holds them up in front of him and tries to pull them apart. He holds it up to the educator, she says, “You have to try get this one over here” and he continues with both paper clips in front of him to pull. He hands it back to the educator and she moves it over

for him, he grabs it back and successfully pulls the two apart. He then places them back into the round storage container.

The child in this example was using the support of the educator while working on the skill of disconnecting materials. The child showed determination in this example because he continued to try disconnecting the materials even though he showed signs of struggling to accomplish it on it own. He was resourceful and asked for support from the educator to support him in his journey.

**Figure 4.7**

*Image providing an example of the wooden beads, plastic wire (black), and large paper clips*



**Transporting.**

Children exhibit pure joy and satisfaction when moving objects from one place to another (Curtis & Jaboneta, 2019). Children show signs they are engaging with the transporting schema when they display interest in moving objects, or themselves from place to place and this can include using bags, buckets or containers to support them in moving the objects (Louis et al.

2013). The children in this study were observed transporting both their bodies and materials. They were seen moving large boxes across the room, a child used a large spoon to transport items across the room, and another used the support of a shopping cart to help move their body and items in the cart across the room. Below are running record excerpts showing how the children used the transporting schema to generate, test, and/or confirm the explorations of their different ideas.

**Vignette #16- Pretend play- Driving a Car**

In the first example of a child working with the transporting schema the boy is using a large cardboard box and pushing it across the room. As he is walking away pushing the box, he waves goodbye to the educator. She responds by extending his thinking and asks if he is driving a car.

> He then goes into the middle of the room and sees a box full of cardboard cut outs. He takes them all out onto the floor and then uses both his hands to push the box across the floor. He then looks up at the educator, starts waving and says, “Bye bye”. The educator looks over at him as he continues to push the box and she waves back and says, “Oh are you in a car?”. He says “Yes” and she responds “What kind of car did you drive to work? A car with four wheels?”. He repeats “Car” and then he picks up the box and walks towards the corner of the room.

This child is exploring ideas connected to role play while pretending the box he is transporting is a car. The educator was able to jump into the experience and extend his play by asking him questions that push his thinking about cars: “What kind of car did you drive to work?”, “One with four wheels?”. In response to the questions the child repeats the word “Car” and then continues to transport the vehicle across the room.

**Vignette # 17- Scooping/Balancing- on a Spoon**

The transporting vessel in the next example is a large transparent plastic spoon which the child is using to pick up loose parts and move them across the room. He is placing the loose parts in a box and then travelling back with the spoon to collect more.

> Using the plastic spoon, he picks up some loose parts from the window and walks over to a box in the middle of the room. He uses the spoon to put the loose parts into the box. He then heads back over to the table by the window and picks up some more loose parts with his plastic spoon. He heads back to the box and places them in.

The child is exploring ideas connected to scooping and balancing. He is practicing the scooping motion while collecting the loose parts in the spoon. He then must carefully and cautiously walk over to the box to ensure the materials do not fall from the spoon. The spoon is quite large which makes it a good vessel to practice with because it allows for several loose parts to be collected and then is large enough for the child to hold it with a good grip.

**Vignette # 18- Pre-walking skills**

In the next example the child is using a shopping cart to support her body while she transports herself and a metal bowl in the room (see figure 4.8 below). During observations prior to this interaction the child is seen using several large items in the room to support their body while standing up but shows preference to crawling when going across longer spaces.

> She crawls over to the shopping cart, carrying the metal bowl in her left hand. She reaches her right hand up to the handle of cart and pulls her body up. She then places the metal bowl into the large part of the cart, using her left hand she pushes the cart and her body forward until she reaches the classroom wall. She then turns her body and looks in the direction of the educator.

The child is using the transporting schema to practice pre-walking skills. The child shows preference to crawling prior to the shared running record observation and is using the shopping cart as a support while she works on balance and control in connection to learning how to walk on her own. She is also using the shopping cart as a vessel to hold the metal bowl she was carrying when she approached the cart.

**Figure 4.8**

*Example of a child using a shopping cart to transport their body and a metal bowl*

**Orientation.**

Children have an instinct to look at the world from many different perspectives (Curtis & Jaboneta, 2019). When exploring the orientation schema, children often look at the world at different angles which can be done by moving their bodies to look from different directions, such as upside down, or turning their objects in different directions while looking at them (Louis et al. 2013). The running record transcripts below display children using the orientation schema to

make deeper connections to the world around them. Children were observed laying their bodies on the floor while playing with materials, bringing objects close to their face and turning them in different directions, and using different viewpoints to discover their learning environment.

**Vignette #19- Gross motor skills/Multitasking**

The example below describes how a child moves their body in several different ways, while listening to a story the educator is reading and engaging with a cork loose part. He starts out looking underneath the table and ends up laying on his tummy across the floor while holding a cork and looking at it from different angles. The educator is sitting close by with a small group of children reading a story out loud. The child is listening to the story and gravitates back to sitting with the group shortly after the observation displayed below.

> He's looking underneath the table still holding the cork in his right hand looking around on the floor. He turns his body around and pushes up onto his feet. He leans forward on to his hands and lifts his leg in the air. He then twirls his body back over onto his bottom, pushing up onto his hands and legs again, he moves his body forward rolling over onto the floor. He then twists his body lifting his one leg in the air with his arms supporting him on the floor. He brings his leg back down and crawls forward three paces. He then flattens his body laying on his stomach with his hands up in the air. He picks up a cork off the ground and stands up and walks over to the wooden table.

In this example the child is testing their gross motor movements, while also practicing the idea of multitasking. The child is making large body movements by holding their body up in the air using their arms, and then also lifting one of their legs while balancing on their hands. He is also seen twisting and rolling his body across the floor. He is practicing the idea of multitasking because while he was engaging in this gross motor movement, he was also listening to a story

being read in the background. Prior to the shared observation, and shortly after it, the child had joined a small group of children and was listening to the educator reading the story.

**Vignette #20- Cause and effect**

In the next example the child is using a different viewpoint while looking at a projector and a manipulative sitting on top of it. He positions his face to sit on the corner of the projector, while the educator prompts him to take a closer look at cylinder filled with a dark liquid and round item inside. He then shakes the cylinder to move the items around and sees them from a different angle.

> He walks up to the projector and puts his face and chin right on the corner of the machine. He picks up a cylinder (filled with liquid and small loose parts) that is on the projector. The educator prompts "What do we see?". With his face still close to the projector he looks inside the cylinder. He responds "Beans, I see beans". The educator repeats "Beans". He picks up the cylinder in his right hand and shakes it up-and-down and up-and-down. He looks at it and says, "Beans, beans". He continues to shake the bottle while looking at the projector in front of him.

The child is working with ideas surrounding the concept of cause and effect as well as gaining a deeper understanding of the projector. The child is exploring the ideas of cause and effect while shaking the cylinder and seeing how the items inside move around as he moves the object up and down. When he stops moving the cylinder up and down, the items inside start to slow down. He then continues to move the cylinder which in turns moves the items inside. The child is also developing a deeper understanding of the projector by looking at it from a different viewpoint. By placing his chin on the corner of the machine, he is much closer and able to see how bright the lights are which are projecting the images on the wall. Typically, when using a projector you

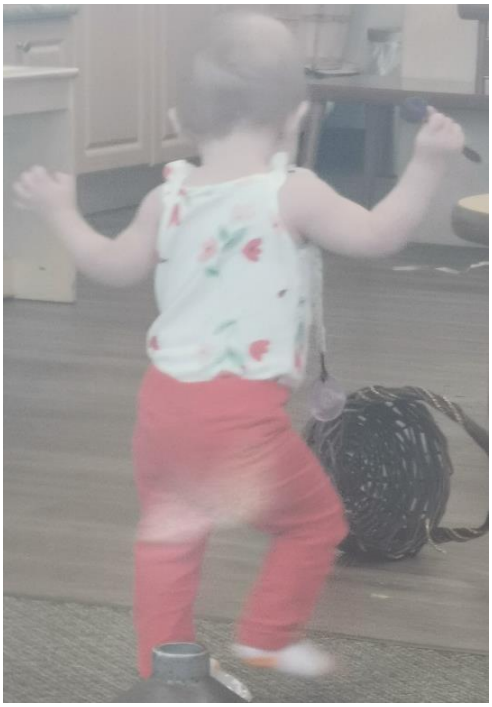
are focused on the way the machine is projecting something on the wall. He was using a unique viewpoint when engaging with the machine.

**Vignette # 21- Exploring different viewpoints**

Below is a progression of photos (figure # 4.9 below) of a child who was working in the orientation schema throughout the observation by exploring the classroom from different viewpoints. This was done on her own by moving their body throughout the room and by crawling and occasionally taking a few steps standing up. The educator then picked them up to see a different viewpoint by showing her pictures hanging from the wall.

**Figure 4.9**

*Three photos showing a child crawling, walking, and being carried while exploring different viewpoints.*



**Enclosing.**

When exploring in the learning environment, children are often seen trying to fit themselves into small cozy places (Curtis & Jaboneta, 2019). Children are engaging in the enclosing schema

when they show interest in creating or occupying enclosed spaces, such as building enclosures around objects or building an enclosure and then occupying it themselves (Louis et al. 2013). Enclosure was observed in this study while children climbed into large boxes and play cribs, fully covered objects on a table using a container, and using a lid to enclose materials in a box. The running records below expand on these experiences further and connections are made to the ideas the children are working with while engaging in this schema.

**Vignette #22- Space- Your body takes up space**

The example below recounts a child who encloses their body in a large cardboard box on the floor of their classroom. The child first removes items inside the box to make room for his body. He then steps into the box and sits on his bottom surrounded by the cardboard walls.

> Looking at his box with a smile on his face, he moves onto his knees and knocks the top box off onto the floor. He reaches in the bottom box and removes the cardboard inside. He then leans his whole body into the opening of the box, placing his right knee inside and then his left knee inside of the box, finally working to sit on his bottom inside the box.

In this example the child is working with the idea of space and how their body takes up space. Before moving his body into the box, he removes pieces of carboard in the box to create more room for his body. When he starts to move his body into the space within the box, he first kneels on his knees and then moves his body to sit on his bottom. During this exploration he was using his knowledge of space and taking small steps at a time to make sure there was enough room in the box for him to sit down on his bottom.

**Vignette #23- Object permanence**

In the next example, the child is enclosing a loose part on the table using an upside-down metal bowl. When he first attempts to cover the item, it pops out of the side of the bowl, and he notices and moves the bowl to fully cover the item.

> He places one bowl upside down on the table. With another bowl in his left hand, he pushes a feather back inside and tries to close it up with another bowl. He takes the bowl with the feather and places it upside down on the table and the feather starts to pop out. He moves the bowl so that the feather is fully covered underneath. He then brings the other upside-down bowl closer so that both bowls are upside down on the table. He puts a hand on top of each bowl and looks up to the educator.

Athey (2007) explains that before *permanence of an object* is well established, a child would show signs of distress when a toy is hidden. Through practice, the idea of permanence can be established, and the child will be able to play with hidden objects without distress. In this example the child is working with the idea of object permanence, understanding that the feather is still underneath the bowl even though it is out of sight. He showed this by continuing to push the feather under the bowl until it was completely covered when it popped out after his first attempt. After he completed the task, fully covering the feather, he looked to the educator for their reaction. There were no observational signs of distress from the child, and it appears they have established the idea of permanence in this example and were working towards deepening their understanding by attempting to completely cover the object.

**Vignette # 24- Filling and dumping**

In the following example a child is using a plastic container and lid to attempt to enclose some shredded paper inside (see figure # 4.10 below for an image of the container and lid). The

chosen container and lid were not a matching set, which caused the child some difficulty while trying to secure the lid to the container.

> She looks over and smiles, then bends down and grabs more shredded paper from the ground. She puts the paper into an orange bucket and then takes a clear lid near by and places it over the top of the bucket. She uses both hands to push down, and the lid slips into the bucket. She takes the lid out and places more paper into the bucket. She then takes the orange bucket, turns around and dumps it onto the ground. She brings the orange bucket back to the table and bends over to find more paper on the ground. She places more paper into the bucket and attempts to place the lid back over the box again.

The child is exploring concepts of filling and dumping in this example while she filled up the orange bucket, dump it on the floor and then continue to fill it again. The enclosing schema is being used while she attempted to place the plastic lid on the bucket to cover the shredded paper inside. What is unique about this situation is that the lid and bucket are not a matching pair, however they are close to the same size. The child made two different attempts to place the lid on top of the bucket to enclose the shredded paper. Shortly after the shared observation below the child left the lid on the table and took the orange bucket to the other side of the room and continued to fill it and dump it a couple more times.

**Figure 4.10**

*Image of the orange box and clear lid the child was using to enclose the shredded paper.*

**Rotation.**

Athey (2007) explains that children are particularly fascinated when objects move in a circular manner. The rotation schema is observed in children when they show interest in rolling and turning actions, as well as engaging with circular objects and or circle and spiral patterns (Louis et al, 2013). Children show enjoyment while spinning, rolling, and dancing their bodies around in the learning environment (Curtis & Jaboneta, 2019). The children in this study were observed engaging in the rotation schema while they were rolling clay, using wooden circular loose parts as props, and watching circular shapes move on the wall. Below are some examples of how children were able to test, generate and confirm their ideas about the world around them while engaging in the rotation schema.

**Vignette # 25- Creation of a product/Real-life connections- Worms**

The child in this example is using their hands to roll clay back and forth in a circular motion. He then looks up at the educator and shares that he is rolling the clay back and forth to make a worm. The educator extends his learning by deepening the connection and asking him questions to expand on his exploration.

He picks up a piece of clay and rolls it back-and-forth in his hands. He looks up at the educator and says, “Make a worm, make a worm”. The educator responds, “You made a worm for your garden, how did you make your worm?”. He looks down at his hands and then up at the educator. He picks up another piece of clay and rolls it back-and-forth in his hands. The educator responds, “You made another worm”. He continues to roll the clay back-and-forth in his hands while looking around the room.

The child is using the repetitive motion of moving his hands back and forth to create something. In this example he is creating a worm. While exploring the materials, he reached out and described his creation to the educator. The educator supports this real-life connection and exploration and jumps in to engage with him. Louis et al. (2013) explains that when educators ask children about their rotational movements and actions while they are unfolding, they can gain a deeper understanding of the child’s explorations.

**Vignette #26- Shape and size/Real-life connections- Glasses**

The running record below describes how a child uses two circular loose parts with holes in the middle (donut shape) as vessels to look through and examine the room. The educator in this example joins in on the exploration and supports his connections by naming his actions.

He then places the blocks on the ground and walks over to the white table and grabs two wooden circles. He lifts the circles up and puts them over his eyes. The educator says, “Are you looking through?”. He brings the circles back down and smiles at the educator. Lifting the circles back up, he continues to look through them scanning the room.

The child is using the circular wooden circles to frame his observation of the room around him. He is showing connections to the idea that the circles and eyeglasses are similar in shape and size. He engages in pretend play while bringing the circles up to his eyes and the educator

extends this exploration by deepening the connection and asking if he is looking through the two materials.

**Vignette #27- 2-D and 3-D shapes**

In this last example of the rotational schema, the child is exploring circular objects through several different forms. The first way is by manipulating a wooden circle on top of the projector. The projector is displaying the circle on the wall and the educator brings his attention to the wall to show him how his actions are projecting across the room. Athey (2007) supports that children should have many experiences exploring the *'movingness'* of objects and opportunities to represent these experiences as well.

> While moving wooden circles on the top of the projector, the educator says, "Look at all those circles on the wall, look at all of those circles". He glances away from the top of the projector and up at the wall. He then moves his gaze back over to the projector and continues to move the circles with his right hand. He then picks one up and brings it to his mouth and chews on it.

In this example, the child is starting to work with ideas of three-dimensional and two-dimensional shapes. The child is moving a three-dimensional wooden object on top of the projector. The educator then brings his attention to the wall where the projection shows a two-dimensional circle that is moving in the same motions as the wooden circle in his hand. The image below (figure # 4.11) shows the set up of the projector in the room, and the two-dimensional circle on the far wall of the classroom.

**Figure 4.11**

*Image of the projector and circles on the classroom wall*

**In which ways might children be generating, testing, and/or confirming these ideas?**

As the children were moving through and engaging in their learning environments, they used their relationships with the materials in the room to generate, test, and/or confirm their ideas about the world around them. Connections were made in the previous section to schema development as a tool for children to expand on their ideas. Athey (2007) describes that children will use whatever they can find in their current environments to extend their schema development. Children are observant by nature and pay careful attention to the materials and experiences around them, which in turn supports the development of their schemas (Athey, 2007). Table # 4.1 below displays the ideas that surfaced during the observations of the children. The ideas are situated next to the materials and in some cases the vessel (such as a body part) which were used to support their understanding of the idea they were generating, testing or confirming in their interactions.

**Table 4.1**

*Table displaying the ideas the children explored in each schema and the material(s)/vessel used to support their explorations.*

| Schema | Idea | Material(s)/Vessel |
|---|---|---|
| Enveloping | spatial awareness | head/box |
| | capacity | feathers, corks/box |
| | hand-eye coordination | feathers/ scarf tweezers |
| | pincer grasp | feathers/tweezers |
| | sharing with a friend | markers/box |
| | covering objects/themselves | self and dolls/orange |
| Trajectory | horizontal vs vertical movements with control | play mop and variety of loose parts |
| | balancing | carboard cut-out, small wooden circle |
| | tracking an object | wind-tunnel and shredded paper |
| | real-life connection- snow | shredded paper |
| | coordination | using their body to jump while throwing paper |
| Positioning | horizontal and vertical lines | corks |
| | balance | corks, tree stand, star loose parts |
| | perseverance | corks |
| | problem solving | tree stand, star loose parts |
| | capacity | tree stand, star loose parts |
| Connecting | listening to learn a new skill | star loose parts |
| | beading | wooden beads, plastic wire |
| | Size: bigger and smaller | wooden beads, plastic wire |
| | disconnecting materials | large paper clips |
| Transporting | pretend play: driving a car | carboard box |
| | scooping | large plastic spoon, loose parts |
| | balancing | large plastic spoon, loose parts |
| | pre-walking skills | shopping cart |
| Orientation | gross motor skills | twisting/rolling their body |
| | multitasking | twisting/rolling their body, listening to a story |
| | cause and effect | projector, cylinder manipulative |
| | different viewpoints | crawling, standing, carrying (by educator) |
| Enclosing | Space: body takes up space | their body, large carboard box |
| | object permanence | metal bowl (x2), feathers |
| | Filling and dumping | orange bucket, plastic lid, shredded paper |
| Rotation | real-life connections: worms | their hands, clay |

| | |
|---|---|
| creation of a product | their hands, clay |
| real-life connections: glasses | wooden circles, their eyes |
| Shape and size | wooden circles, their eyes |
| 3-D and 2-D shapes | projector, cylinder manipulative |

The Reggio Emilia concept of the hundred languages of children is a pedagogical strategy that supports the children's use of both verbal and non-verbal modes of communication and can be seen in the ways children use materials and resources available to them while investigating their ideas (Harcourt, 2015). Wexler (2004) describes that the hundred languages of children encourage the use of different media to support children in communicating their learning. During their Zoom interview, one of the educators described how the materials in the classroom became languages for the children which could be used in a hundred different ways. For example, she described that she thought paper and carboard would be a one-dimensional exploration; however, it became more than her original thought and the children embraced the materials in a variety of different ways. She explained that the exploration of paper and carboard was really a whole big body movement activity because the children were ripping it, crunching it, and building a relationship with it in the classroom. She connected this type of rich exploration to a natural flow of how children develop their ideas.

It is through the children's relationships with the educators, their peers, and the learning environment, that the pedagogical strategy of the hundred languages was brought to life in this study. The children's interactions with the materials went further than just using them as a tool. They became the springboard for helping them construct the ideas listed in Figure 4.1. It was through the repetitive interactions with the resources in the room that the children were able to test their ideas and further communicate their understandings. The materials the children explored in this study (see a list in figure 4.1 above) became the modes they used to generate,

test, and/or confirm the ideas they were exploring. For example, when working with the idea of deepening the understanding of their pincer grasp, a child used tweezers and feathers as the mode to communicate their development of the skill. Pacini-Ketchabaw, Kind, and Kocher (2016) describe the dynamic role that materials have in a learning setting and share that materials "provoke different ways of thinking as a child engages and works with them" (p. 4). They describe how materials can take part in shaping children's ideas and how materials can "speak back" to children (Pacini-Ketchabaw et al., 2016). The children in this study are thinking *with* the materials, as described by Pacini-Ketchabaw and colleagues (2016). To expand further on the example above, each time the child placed a feather in the tweezers and squeezed his hand, the tweezers responded by tightening around the feather. In this interaction, the child was deepening their understanding of the materials, in this case the tweezers and feathers, and in the process further developed the control of his pincer grasp. It is through the exploration of his relationship with the tweezers and feathers through repetitive motions that the child was able to further generate, test, and/or confirm their understanding of their pincer grasp and communicate his learning by improving his method of moving the materials with more control.

**How are educators fostering children's development of their ideas in a Reggio inspired learning environment?**

To support the research question: "How are educators fostering children's development of their ideas in a Reggio inspired learning environment?" the educator Zoom interviews, through-the window observations, and video-based recordings were analyzed and coded to find major themes that emerged. The major themes that emerged and that will be discussed and include preparation of the classroom and the materials provided, educator assisted/provoked

experiences, interactions with the children, supporting children's safety and welfare, and engaging in professional development.

A total of seven educators were interviewed in this study, and each interview was approximately one hour in length. Pseudonyms have been used for the study participants to support confidentiality and anonymity in their responses shared below. The interviews were conducted prior to the scheduled through-the-window observations and video-based recordings of the classrooms. During the interviews, each educator gave a brief introduction of themselves and shared their background in early childhood education and how long they have been working at the participating center. Six of the educators completed their early childhood education diplomas, and one of the educators is a student completing their Bachelor of Psychology degree. Five of the educators were hired at the participating child-care immediately following the completion of their diplomas and completed a placement at the center prior to their employment. Regarding experience in the field of ECE, four of the educators have 5-10 years of experience, and three of them are newer to the field with 1-2 years of experience. The following sections will take a closer look at the major themes that emerged while analyzing the educator's role in supporting the children and their ideas as well as connections to research in the field.

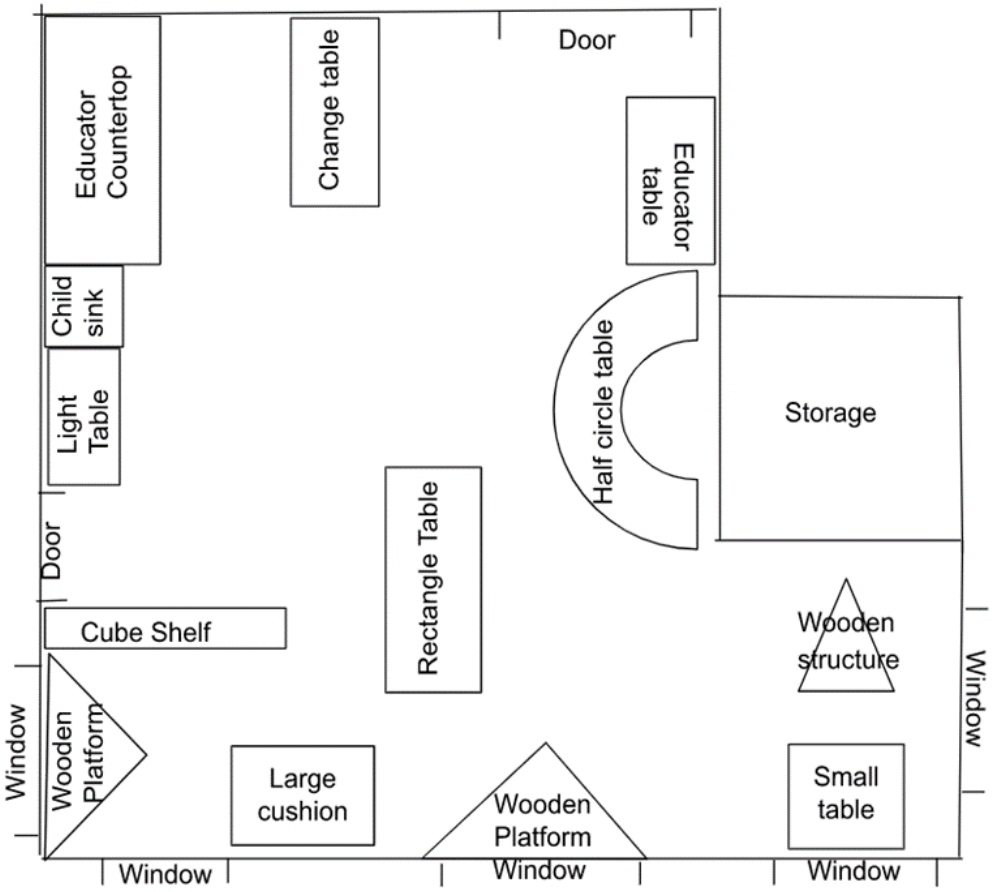
**Preparation of the classroom and the materials provided**

During the first through-the-window observation, a sketch of each room (Figures, 4.12, 4.13, 4.14, 4.15 below) was recorded in the researcher's journal. This sketch included all the stationary and "larger" elements in the room. After the completion of the sketch, I then recorded all the materials provided in the classroom as observed through the window. This recording included materials available for the children to explore as well as elements on the walls, shelves, and ceilings of the room. A complete list of materials is in the notes section under each of the figures

below. The blueprints of the learning environment and lists of materials were especially helpful while analyzing the research data because they were used as a reference while transcribing and coding the interview and video data. When reflecting on the transcriptions of the educator ZOOM interviews, I was able to pull out the blueprint and make connections to the different elements, such as areas in the learning environment. For example, the children's interest in looking out the classroom windows emerged several times throughout the interviews. When looking at the blueprints, I noticed that two of the classrooms had large child-sized tables in front of the windows. The children would climb onto these tables to look out the classroom windows. While reviewing the video data, I referenced the material lists I completed during the through-the-window observations. This was helpful when I was unable to identify something the child was playing with or could not get a clear view of their exploration from the angle of the lens.

**Figure 4.12**

*Layout of Sr. Infant room (TL)*




*Notes: List of Materials:*

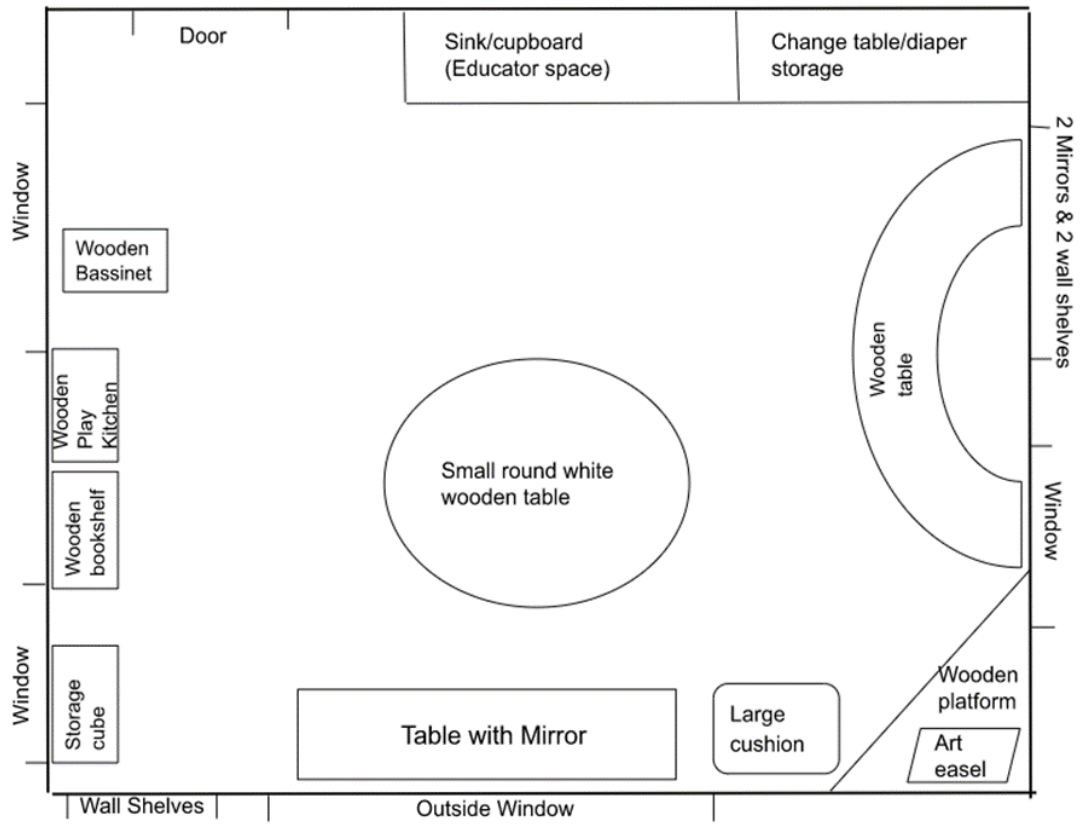
*Loose parts/materials observed from the window.*

- *Table in front of the window: tin muffin cups, spatula, cheese pieces, wooden circle tray, small bowls/small logs.*
- *Table middle of the room: wooden blocks (with letters, animals, and animal names), straws, empty water bottle, cheese piece. Under the table: pom poms in a jar, wicker basket, wooden beads.*
- *Light table: wooden blocks with transparent colour, bottom of blue water bottles, coloured transparent shapes, twirly straw*
- *Table in front of the small mirror in the corner of the room: large hole in the middle, filled with wooden beads.*
- *Bookshelf: 8 board books (found faces, baby signs, encyclopedia of rainbows)*
- *Storage cubes: Live plants on top, soccer ball, logs, telephone (black with cord).*
- *Floor/around the room: Shopping cart (metal), large water jugs, cardboard with aluminum foil on it, blue round beach ring x2, clear plastic storage container, jars with metal washers/seeds, painted rocks, telephone, large logs.*

- *Walls: white shelves (peacock feathers, books, children's artwork), rope with wine corks, dried flowers in vases.*
- *Ceiling: Branches with wooden beads/pinecones, dried flowers, pictures hanging from strings (mop, snake, doorknob).*
- *Storage above the Educator countertop: large +small clear jars with a variety of materials.*

**Figure 4.13**

*Layout of Jr. Toddler room (LD)*




*Notes: List of materials:*

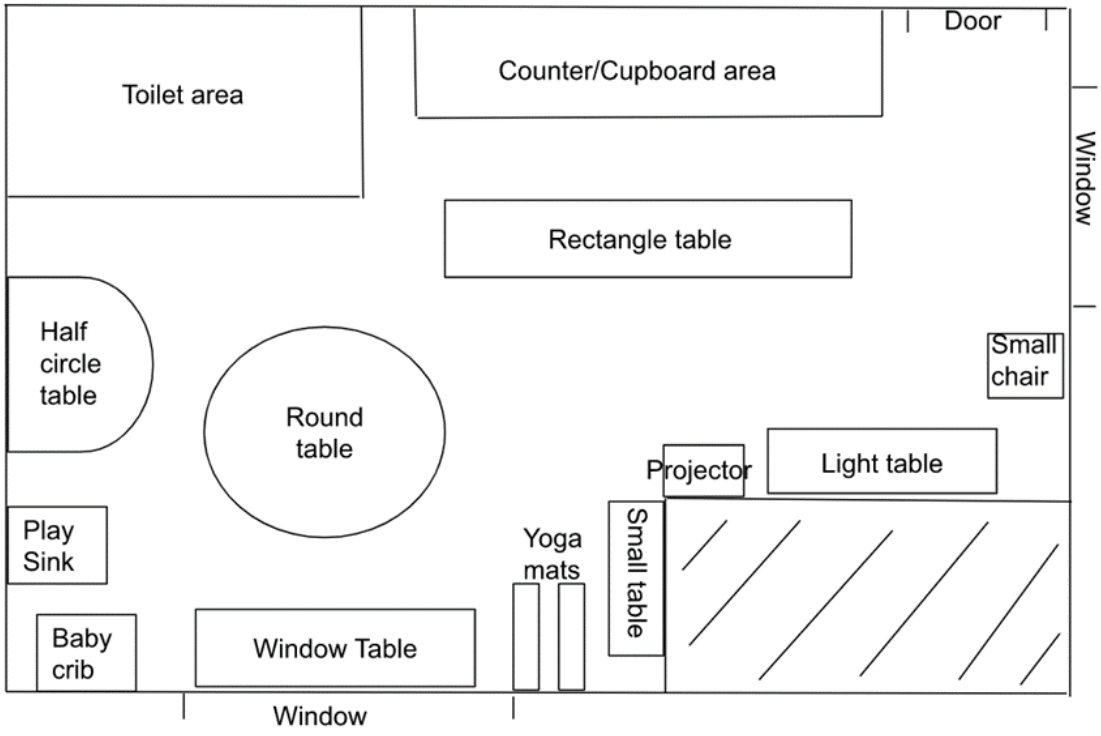
*Loose parts/ Materials observed from the window:*

- *Table with mirror: Coloured pipe cleaners, corks, Tree/branch stand, small white wooden rings, cardboard cut out of M shape & 8 shape, 1 bin with multi coloured connector pieces.*
- *Storage cube (6 square shelves): clear bowl with pipe cleaners and wire, wave shaped stackable wooden blocks, green cloth storage cube with a variety of loose parts (doll hairbrush, 3 small tin bowls, pink tea pot & cup), grey bin with paper towel and toilet paper rolls and small wooden balls, glass bowl.*
- *Small round white wooden table: Triangle and rectangle cardboard cutouts, small tin bowls, clear scoops and spoons, corks, small white rings, blue butterfly plastic container.*

- *Bookshelf: 10 board books (1- That's not my monkey).*
- *Wooden half circle table: Variety of cardboard (10 total) cutout shapes spread across the top.*
- *Art Easel- chalk.*
- *Floor space: larger cardboard boxes and cardboard cutouts, feathers, small white rings, small wooden balls, child sized broom and mop.*
- *Walls*
  - *Inside window wall: clipboards by the door with student information/documentation, black shelves with documentation web and pictures with write ups (documentation titled: How do toddlers build a relationship with paper?), hanging in front of the window is a "communication tube" that connects to the other toddler room.*
  - *Outside window wall: 6 white shelves (check cameras for materials).*
  - *Wall by circle table: 2 long windows (horizontal), above mirrors are two black shelves: top shelf- book (Magical mobiles) and vases with pipe cleaners, Bottom shelf- flower notes book, clear jars with loose parts.*
- *Ceiling: wire hanging with plastic clear shapes and wooden beads, white curtain with vine leaves (artificial).*

**Figure 4.14**

*Layout of Sr. Toddler room (LD)*



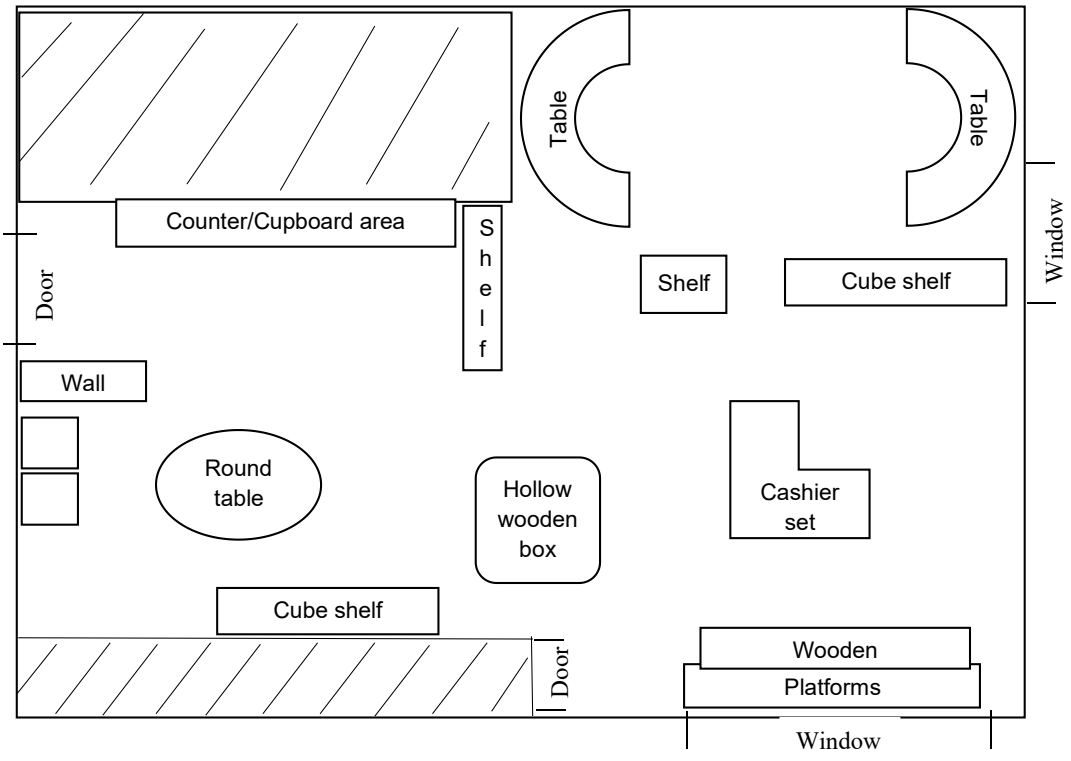

*Notes: List of materials:*

- *Half circle table: 2 large chunk puzzles (one is bears).*
- *Window table: Abacus, car puzzle (4 cars) green sensory grass.*

- *Counter: clipboards & children's info, jars + clear bins with loose parts (wooden circles, corks), laptop.*
- *Long rectangle table: plastic cone with holes, string, wooden beads, string lights (battery powered), sliver wire, orange triangle beads, paper muffin tins, plastic zip ties, fruit tray organizer with all different coloured wooden beads, flower shaped placemat (Blue with holes), colourful jacks (like the game), large wire paper clips, small wooden circles.*
- *Light table: 3 large mirrors across the back standing up, colourful transparent shapes. Above the table: Welcome to the toddler family display with family pictures*
- *Table by yoga mats: red, green, blue, and white scarves, plastic containers.*
- *Walls:*
  - *shelves above yoga mats: window picture frame with pictures of the children, rainbow stackable.*
  - *Shelves above half circle table: documentation including images of the children, sticky notes, "how do we see children from the adult gaze" sign, "fall in love with paper "sign, books: going on a bear hunt, loving kindness, you are a beautiful beginning, jars x 3 with beads.*
- *Ceiling: tree branch with green string lights.*

**Figure 4.15**

*Layout of Toddler room (TL)*



*Notes: List of materials:*

- *Round table: glass vase with real sunflowers, 4 clipboards with paper, jar of pencil crayons, letter board sign.*
- *Cube shelf (by the door), foam arches, large green plastic puzzle pieces, board books, wooden blocks, duplo lego.*
- *Cube shelf (middle of room): projector facing back wall, laptop, speaker system, blue baskets with loose parts, large plastic string spool x3.*
- *Semi circle tables x2: plates with different colours of paint, paint brushes.*
- *Cashier set: pretend debit machine, big metal pot, pretend food, large green plastic circles.*
- *Ceiling:*
    - *over top of round table: sheer curtains draped with wooden circular string lights.*
    - *Over top of semi circle tables: pictures hanging from a long string (x3).*
- *Walls:*
    - *Above cube shelf: white shelf with a live plant in a planter, surrounded by documentation of the children (work samples and pictures).*
    - *Back wall by semi circle tables: white rolled paper taped to the wall.*
    - *Beside cashier set: two white shelves, clear jars with loose parts, documentation of the children (work samples and images).*

**Materials and Experiences in the Classroom**

The educators are responsible for the room set up and selection of the materials that are available for the children to explore. During my through-the-window observations, I noticed that even the layout of the room can change from day to day. For example, Kenzie shared, “If they are really using their bodies, we make space for that, [if they are] into climbing, we bring stuff in support that”. During my first observation of the Sr. Infant room (Figure 4.11), there was a large rectangle table in the middle of the room and a large wooden triangle structure off the bottom right side. During my second visit to the room, the large rectangle table was flipped upside down and the wooden triangle structure pushed up against it like a tunnel (see Figure 4.16 below). This idea connects to the Reggio Emilia philosophy of reciprocity as outlined by Fraser (2012), who explains that the classroom environment is a living entity and should be open to change and responsive to the children and educators of the space.

**Figure 4.16**

*Example of how the environment adapted to meet the children's explorations*

When asked about the specific materials included in their rooms, Cassy explained that management would bring in materials to support larger center-based investigations. The materials would be added to the center's "maker space" (Figure # 4.17 and # 4.18), which is an area where educators can go to select open-ended materials to include in their rooms and their daily investigations. During the time of observations, there was a center-wide investigation of the material wire, transitioning from the material cardboard.

**Figure 4.17**

*Image 1 of 2 of the Maker Space area holding opened materials for classroom investigations.*

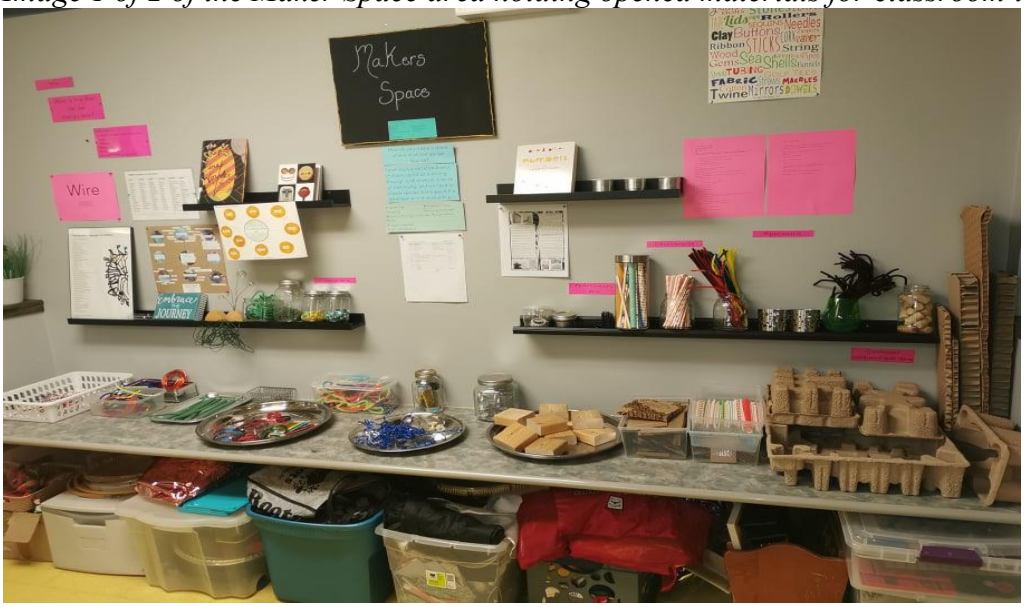



**Figure 4.18**

*Image 2 of 2 of the Maker Space area.*

During the educator interviews, there were four main themes which emerged when discussing the inclusion of materials and experiences in the classroom: child led, home inspired, natural/real world, and safe and developmentally appropriate. Each theme will be discussed further below.

**Child led.**

A major theme that became apparent when asking the educators about their environments and the materials they have included was the idea of child-centered selections. Weikart (1972) summarizes child-centered pedagogy as child initiates, teacher responds, where the learning process is structured by the educator based on the children's needs and interests and then the children set the pace of how it unfolds. Megan explained in her interview that educators only have the children's attention for a short while. You need to take advantage of this time and follow their lead and their interests. Megan described that she believes in a child-led, inquiry-based, authentic, and meaningful play-based approach. Rachel echoed this approach and suggested that if educators let the children take the lead and support their curiosity with proper resources, they will engage with the materials much faster, therefore supporting deeper development of their understandings. Noelle noted that there is a sense of freedom in their classroom and the children are allowed and encouraged to experience the materials however they choose. A child-centered pedagogy views children with respect and aims to tailor the learning environment to support the children as unique individuals who should be happy and interested in the learning journey (Athey, 2007). During the classroom observations, it was clear the children were interested in the learning because of their positive interactions with peers, educators, materials, and spaces in the learning environment.

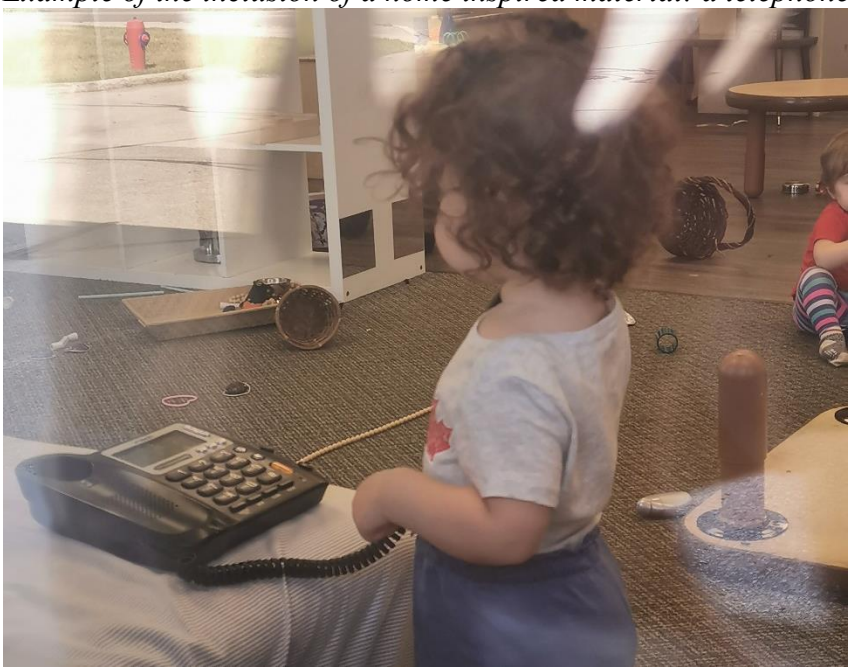
**Home inspired.**

Home inspired materials was another theme that emerged from the educator interviews. Kenzie explained that she likes to make their classroom feel "homey-ish" as much as possible. This includes adding touches from the children's home, such as family photos and music playlists inspired by music that is listened to at the children's homes. Kenzie shared in her interview that to help bridge the gap between home-life and the children's experiences at the center, she and her teaching partner reached out to families and asked what kind of music they played at home and what their child's favourite song was. They then took these suggestions and created a playlist for the children to listen to while exploring in the classroom. Cassy described that when selecting materials to bring into the classroom, they try to incorporate items the children might have access to at home (See figure # 4.19 for an example of a telephone in the classroom). Rachel also spoke to the idea of bringing familiar things the children might find at home into the classroom, such as authentic items that could be found in a junk drawer. They both described that children enjoy exploring all diverse kinds of things, especially items found in everyday life.

In Reggio Emilia centers in Italy, parents are considered to be equal partners and are viewed as strong and powerful by virtue of their parenthood (Gambetti, Sheldon-Harsch, & Kitchens, 2000). Family participation is valued in Reggio Emilia schools and parents are seen as important partners with the right to be informed and to have a voice when discussing school matters (Gambetti et al, 2000).

**Figure 4.19**

*Example of the inclusion of a home inspired material: a telephone*



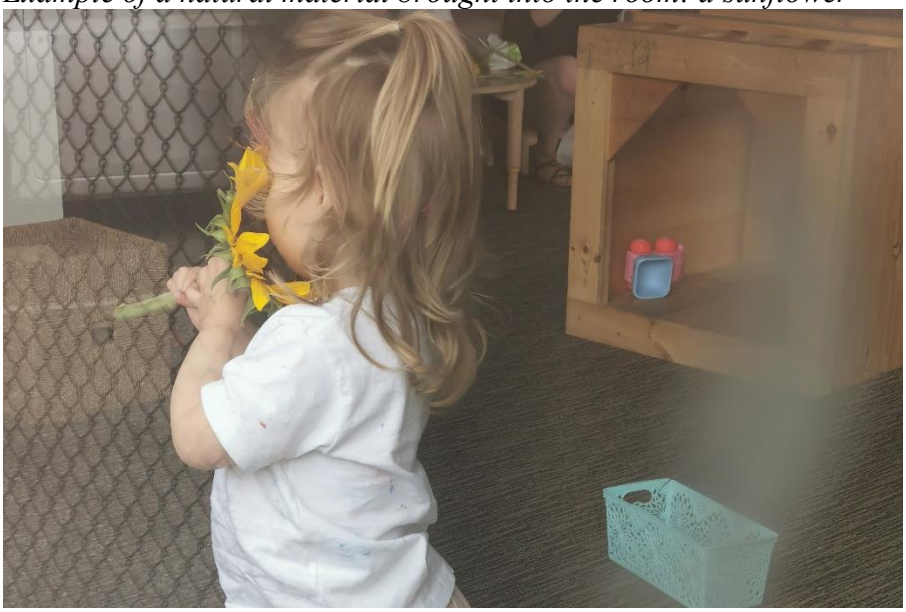
**Natural/real world.**

When thinking about the types of materials the educators want to bring into the classroom, several of them mentioned they try their best to include as many natural elements as possible. Cassy explained that they tend to avoid human-made materials when possible and prioritize natural products because this gives the children the opportunity for a real-world experience. Eva mentioned that they use natural products whenever possible in their room, such as wood for building and soil and plants for planting. Rachel shared that there is an emphasis on authentic materials in their room; for example, they use water and sand, and the children enjoy experiencing both dry and real flowers. It was also described that during the COVID pandemic, there were extra cleaning and sanitizing measures enacted to ensure the health and safety of the children, educators, and their families. During this time, natural elements (such as pinecones, acorns, leave, twigs, etc.) were an excellent alternative because they could be collected in bulk and easily disposed of back into nature rather than having to go through a sanitation process.

DeViney et al. (2010) describe that nature inspires beauty and advocate that classrooms should be immersed with elements of the natural world including sights, sounds, tastes, smells, and textures. When children have an opportunity to interact with nature on a regular basis, they deepen their understanding and appreciation of their role in taking care of the planet (DeViney, 2010). In figure 4.20 below, is a child who is engaging with natural material brought into the classroom by educators. I observed the child select the flower from a vase on the small round table and walk towards the window holding the flower. As evident in the photograph below, she is bringing the flower up to her face and using her nose to smell the flower. This was an interaction that used several of the child's different senses, such as sight, smell, and touch.

**Figure 4.20**

*Example of a natural material brought into the room: a sunflower*



**Safe and developmentally appropriate.**

When describing the selection process of materials they bring into the room, the educators alluded to the fact that they think of safety first and foremost. Rachel shared that while following the children's lead, the educators will bring in almost anything to support their

explorations and emphasized that keeping safety in mind is always a top priority. Cassy also spoke to the idea of safety and explained that when materials are brought in, they ensure they are not a hazard to the children and cannot cause harm in anyway.

In conclusion, when discussing the preparation of their classroom and the materials they provide to support the children's explorations, the educators are very intentional in their selections. Stacey (2018) describes the idea of being *intentional* with materials and explains "Nothing enters the environment that is not carefully considered. The materials are there for a reason, whether that reason is a repeated playful engagement from the children, an invitation from the teachers that may provide for further investigation from the children, new items that tie into their thinking, or something challenging that will provoke discussion" (pg. 110). The educators in these settings followed the children's lead when selecting materials and provided relevant experiences in the room. They emphasized the importance of natural and real-world opportunities for the children which are inspired from their home and everyday life. Above all, the educators were keen on making sure the materials were safe for the children's developmental level, while still giving them enough risk to support further development and deep explorations.

**Educator provoked/supported experiences.**

During the Zoom interviews, the educators discussed how they plan for certain provocations to support their children's engagement in the room. This would include setting up a learning experience prior to the children arriving or adding the elements during a transition time throughout the day. Cassy and her partner would spend time during an informal morning meeting to talk about a provocation or activity they would like to work with that day. She explained when these opportunities are presented, they encourage the children to explore the activity and materials on their own, at their own pace and that none of the children are forced to join in.

When asked about supporting the children's ideas in the classroom, she explained "This is where we come in. We take information we already know and apply [it] to provocations and experiences and use their interests to direct the learning and educate them in things that interest them". Cassy goes on to describe "So it really just allows them to construct their own learning paths and it allows us to create or expand these inquiries into those investigations and provocations." Noelle described that when it comes to selecting the materials and experiences available in the room, the educators have influence, with no exact outcome. The children are allowed to experience the classroom materials however they choose. Samantha describes the importance of intention when providing provocations in the learning environment. She discussed how she would reflect on the goals of the project, and why she chose to introduce the materials that she did. When exploring in the classroom, she will follow the children's lead and have no set expectation for how they engage with the activities provided. She explained that if the children are not showing interest, she would consider other objects that could be used to spark engagement.

Aside from the selection of the materials and provocations the educators included in the room, during my observations there were several larger learning opportunities planned by the educators where they brought in specific materials and elements to support a whole class exploration. During these interactions, the educators were there to model, support, and, when necessary, guide the children while engaging the opportunities. Three larger opportunities will be discussed below, and the educator's interactions will be showcased as they play alongside the children.

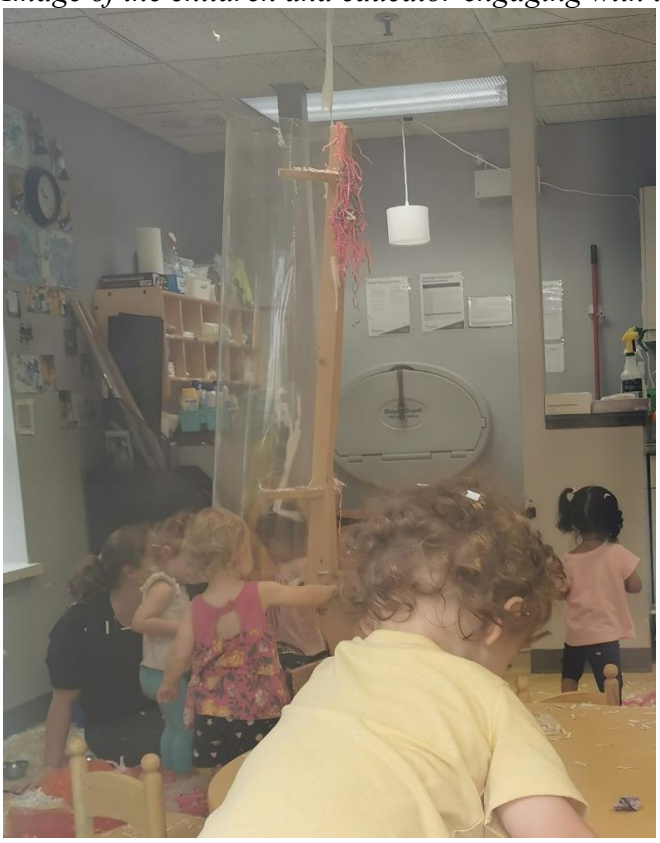
**Wind tunnel.**

During the wind tunnel experience, the educator rolled in the apparatus while the children were finishing up their snack at the table (See apparatus in Figure # 4.21). As she rolled the wind tunnel into the room, the children shifted their focus and watched her set it up. Some of the children approached the wind tunnel right away, while others watched from the table. The educator then went to the cupboard and selected two large yellow bins full of shredded paper. As she walked back towards the wind tunnel, she posed the following questions “What is going to happen?”, “Do we put it inside or on top?”, “Ohhh what noise did that make?” During the exploration, she positioned herself close to the wind tunnel and would interact with the children as they approached saying things like “Wow”, “did you see where that went?”, “Would you like to try?”. Periodically, she would introduce new materials for the children to use in the wind tunnel in combination with the shredded paper, such as paper streamers, tissue paper, and silk scarves. The children would bring new heavier objects like books and plastic tubs and try to float them up the wind tunnel. This would spark new conversation and she would ask the children why some of the objects were floating through the tunnels and why some were not.

There were also times where the educator would help direct children who were interested in the same materials and work with them to arrive at a conclusion. At one point, the educator noticed one of the children was interested in the lever that was holding the tube part of the tunnel in place. As he was pulling on it and trying to move it, she moved closer to him and then explained how to use the lever and what its purpose was (i.e., to hold the tube in place). They then worked together to pull the lever out and move the tube on more of an angle, which then allowed the shooting paper to reach a different part of the room.

**Figure 4.21**

*Image of the children and educator engaging with the wind tunnel*



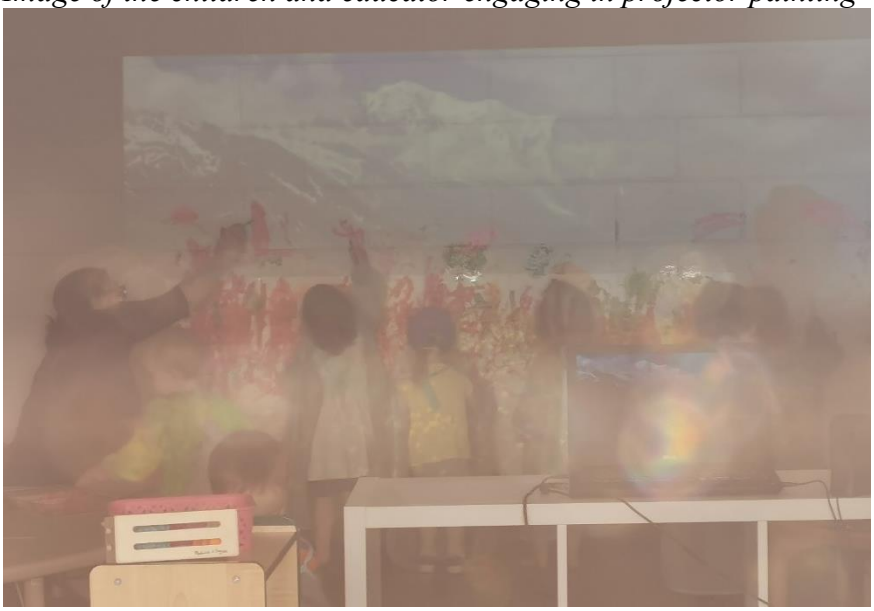
**Projector painting.**

Prior to the painting experience, the educators called the children to a whole group circle time by singing “To the carpet, to the carpet, and sit down, and sit down”. At this time, the educators had already set up the projector, laptop, and white paper on the back wall. The painting activity was introduced during the circle time and the educators explained to the children that if they are interested, they could paint some flowers on the back wall. As the children left the circle, those who were interested in painting were guided by the educators to the corner of the room to get a smock. The educators then started the projector, which displayed a field of flowers on the wall over top of the white paper accompanied with some soft instrumental music. While waiting for the paint to be set out, the children approached the wall and followed the flower images

displayed as they moved across the wall. The images were part of a slide show which would cycle through different images of flowers. The educators distributed paint brushes to the children, and made comments like “Wow”, “Great colours”, “I see you painting the wall”, “Beautiful, friends” as they started to paint on the walls. To support the children in the exploration, the educators explained that one table has the colours red, yellow, and blue and the other table had green and purple. The educators also joined in the painting, selecting their own paintbrushes, and making strokes on the wall saying, “Yes, I am going to paint too, I am going to paint a purple wildflower”. They continued to sit next to the children, taking pictures and recording videos for documentation, and refilling the paint as needed. At one point, all the children were invested in the activity. The educator had to go to the neighbouring classroom to get more smocks to ensure all the children could participate. While observing the children, the educator noticed the children mixing colours and named the learning, “Are you mixing colours over there?”, “You are making the colour orange.” When needed, the educators would direct the children. For example, when they were approaching the projector machine, they would redirect them back to the painting activity, and if they were painting on the floor, they would remind them to paint the wall. As the children finished the activity, the educators would help them remove their smocks and wash their hands.

**Figure 4.22**

*Image of the children and educator engaging in projector painting*



**Water exploration.**

During free exploration, the educator asked the children “Do you want to do some water? Some water play”. They then began to set up the table, modelling each step as they went. “Okay we will get some towels out”, “Look what I have got”, “Keep it on the table”. Two children followed the educator while they set up the activity, and more children approached as new materials were introduced. The activity included two trays of different coloured water, separated into different compartments, along with some loose parts such as gems, chess pieces, scoops, and buckets. New materials were introduced throughout the exploration as needed. For example, more scoops and buckets were included because the children showed interest in those items. The educators stayed close to the table, taking pictures and directing the children when needed. For example, one child kept putting some of the loose parts in their mouth. The educator would remind them “Not in your mouth”. The educator would also model different ways to play with the water, using scoops, mixing colours, and making the loose parts splash. While engaging with

the children, the educators would vocalize the different actions they were doing and interact with the children as they explored the materials. One child lined up four different jars full of coloured water.  As she picked up each jar, the educator would label the colour for her, and the child would repeat the colour back. As the children started to lose interest, the educators started to put the materials away and tidied up the area. They used the towels to dry up the area and the children's hands, and then started to change the children's diapers to get ready for lunch time.

**Figure 4.23**

*Image of the children and educator exploring water play*

**Interactions with the children**

During the through-the-window observations and while reviewing the video recordings, it was evident that the educators valued their interactions with the children. This was seen by the way they positioned themselves in the room during play time so that they were at the children's level and easily accessible to the children. In many of my observations, the educators are seen sitting on the floor or in the child sized furniture at the children's level. When the educators interacted with the children, they would approach the child and make eye contact to show they were listening and cared about what they were saying. It was clear that the children and

educators were co-learners in the rooms. The interactions between the children and the educators included body language and facial cues, or one or two words from the children to catch the educators' attention. The educators would often string sentences together for the children to model how to ask for what they need, name the materials or learning that they saw happening at that moment, or join in on the children's explorations and extend their learning.

The following running record excerpt from the video-based recording displays an interaction between a child and the educator and demonstrates how she extended their exploration:

> The educator comes up to him and says, "Making a stew?" he nods his head up-and-down and says "Yes" continuing to use the spoon and his right hand and his left hand to pick up different loose parts on the table and place them in the small metal bowl. The educator asks him, "Should we pick up some more loose parts from the floor for you and add them?". He looks down at the loose part she puts on the table and nods his head and says yes.

When naming the learning for the children, the educator would label the materials they observed the children interacting with and describe out loud how the children were using the materials. Below is a running record except showcasing an educator naming the learning for a child while they explored using tweezers to move objects:

> The educator looks at him and says "Wow (Child's name) you're so focused. You are using such careful hand. Are you transferring all those things?". He continues to focus on what is in front of him by picking up objects with the tweezers and placing them into the bowl.

When joining in on the children's play, the educators would follow the children's lead and facial cues during the interactions. Below is a running record excerpt of an interaction between a child

and their educator which showcases the educator joining in on the child's play by engaging with the materials they were currently exploring.

> (Child's name) picks up a circular loose part off the ground and puts it up to his eye and faces towards the educator. The educator then playfully says, "I can't see you. Oh I can see you through the little hole." (Child's name) smiles in response to her reaction.

During their Zoom interview, Eva shared that during her interactions with the children in her room, she focuses on building a sense of togetherness and community. She maintained the importance of building relationships and friendships while focusing on the socio-emotional development of the children.

**Supporting children's safety and welfare**

An important role the educators fulfill in the room is supporting the children's safety and welfare throughout their interactions. This was observed in a variety of ways, such as: supporting the children while using the bathroom/changing their diapers, helping children wash their hands, wiping/blowing the children's noses, supporting children during risky play experiences, providing support when they were distressed or hurt, supporting the children in navigating their relationships with their peers, and ensuring the classroom space was clean and safe for the children to explore. The educators play an important nurturing role while in the classroom, and support and model self-help skills as they learn how to take care of their bodies and how to play safely in the classroom.

Below is a running record excerpt of an interaction showcasing how an educator supported a child in wiping their nose and then modelled how to hand-wash. This interaction inspired the child to then replicate the handwashing and nose wiping behaviour in their own way using the play furniture in the classroom.

> The educator then walks over to her, takes her hand, and says, “Come here, let's wipe your nose”. She follows the educator to the back of the room. They get a tissue together and the educator wipes her nose. She then walks away, still looking at the educator, while the educator sanitizes her hands. The little girl is still looking toward the back counter. She then turns around and walks towards the pretend sink in the classroom, puts her hands under the faucet, and rubs them together, pretending to wash her hands. She then takes a pretend handful of water, puts it up to her nose and shakes her face.

There were several instances observed where the educators would use their proximity or support while students were engaging in risky play while exploring the classroom. This included the educators sitting close to the children while they stepped up on the windowsill to look out, holding their hands out for support if needed or educators helping children climb down from standing on top of the tables which were covered with loose parts. There were also times where the children needed the educators support after a small fall or bump in the classroom. Below is a running record excerpt of how an educator supported a child who fell in the room and bumped his head:

> Standing on the wooden block by the window, he stepped backward and lost his footing. He fell to the ground and bonked his head during the fall. He let out a scream followed by a cry. The educator turned her body quickly when she heard the noise and rushed over to the boy and picked him up. The boy reached up to the educator and laid his head on her shoulder when she picked him up. The educator asked the boy, “Are you okay? Are you okay honey?” while rocking him back and forth and lightly tapping his back. The other educator left the room and came back with an ice pack for the boy (Figure # 4.24). The educator says, “Okay buddy, let’s put an icepack on your head”. The boy takes the

icepack and holds it to his head while continuing to place his head on the educator's shoulder.

**Figure 4.24**

*Image of a child holding an icepack the educator gave to him while comforting him after a fall.*

The educators played an important role in navigating the children's interaction with their peers. The were constantly observing the children interacting with one another and would step in to highlight positive interactions and help the children to navigate trickier situations. During the more complex situations, the educators would verbalize what they saw and would describe some possible emotions/feelings involved. The running record below displays how an educator supported a child who was disappointed after another child knocked over their creation:

> A peer of (Child 1) comes over with a piece of cardboard and bangs it on the table, knocking over (Child 1's) bowl full of loose parts. The educator is sitting close and asks the peer to come over. She tells him "I think you should make sure that he's OK. He

might have hurt feelings from knocking over the bowls. We don't want to wreck his creation. Look how hard (Child 1) is working." She then looks at (Child 1) and says "Are you OK? You tell (peer) if you don't like it".

The educator was able to model for the children in this example how they can check-in with their peers after a conflict.

**Engaging in professional development**

During the individual Zoom interviews, each educator was asked if they have participated in any professional development, such as workshops, book studies, tours, conferences, webinars, and specifically if they have had any professional development in the Reggio Emilia approach. Several different professional development opportunities available for the educators (coordinated by management), were shared and there was an overall positive outlook and sense of joy emanating from the educators when discussing their engagement with professional development. There was a common theme among the educators that professional development was supported and encouraged by the center's management team. The center supports the educators by providing professional development opportunities, such as bringing in professionals from the field, but also supporting opportunities outside of the center by travelling as a team to attend different school tours, conferences, and events. It was also mentioned that due to COVID limitations, professional development outside the school had been suspended, however they were still able to engage in their monthly staff meetings where they come together and discuss their experiences, connect with educators in the same age groups, and discuss professional development opportunities.

Several of the more senior employees shared that the child-care center holds their own annual conference for educators in the surrounding area. Cassy explained that the annual

conference gives them the chance to connect with other passionate educators who may have different points of view in the field. She discussed that this was a good opportunity to see how the Reggio inspired approach at their center differs from other educational approaches in the area. She revealed it was an excellent opportunity to collaborate and gather information to support further provocations with the children in their care. Kenzie shared in her interview that when attending professional development, she is "There to learn about the kids, but it's taught me so much about me, like I understand myself so much more now that I've done these workshops". She revealed that she is passionate about self-regulation, especially the work of Dr. Stuart Shanker, and would enjoy the opportunity to attend workshops in connection to self-regulation as it has changed her life learning about approaches in connection to self-regulation. Samantha shared in her interview that working as an educator in the field, she sees the value in professional development and the idea of continuous learning. Although she has not had the opportunity yet, she would love to attend a Reggio Emilia tour in Italy. Megan explained that her professional development opportunity visiting a Reggio inspired school in Portland was "A big turning point for me" because she was a newer staff member who was still learning about the Reggio approach. She described the experience as *magical* and something she still references in the classroom even though it was over a year ago. When she attends professional development, she wants it to be something she is interested in and connected to the important conversations happening in her learning environment.

# Chapter 5: Conclusions

A key aspect of what makes this research study unique in the field is that the data was collected during the COVID 19 pandemic. Considering the age of the children, I often asked "How did the pandemic impact the conclusions and findings of this study?" In relation to the development of children's ideas, it made me wonder: "How did the pandemic influence the children's ideas? This was a time when the children were surrounded by adults who were wearing masks. How, if at all, were the children impacted by the inability to see their educators' facial expressions? Did this affect their ability to develop meaningful connections to their educators? I believe it is important to keep these reflections in mind while interpreting the conclusions of this study.

## Review of the Study

The purpose of this study was to explore the ideas toddler-aged children are investigating about their world, and how the educators are supporting their explorations. The study observed how children represent their understandings by considering the Reggio pedagogical strategy of the hundred languages of children. The hundred languages of children is a strategy used in the Reggio approach and is observed through the verbal and non-verbal modes of communication children use to deepen their connections and facilitate their expressions, understandings and interpretations of the world around them (Harcourt, 2015; Fraser, 2012; Wexler, 2004).

A qualitative analysis of the data revealed that the children were actively exploring a vast number of ideas about their world and used repeated actions in the form of play schemas to support their investigations and make further connections. Educators supported the children by preparing the classroom environment, providing educator assisted/provoked experiences, interacting with the children, supporting their safety and welfare, and engaging in on-going

professional development. This chapter provides a summary of the main findings, a discussion of key conclusions, suggestions for further research, and implications and contributions to the field of early childhood education.

**The Hundred Languages in the Context of this Study**

The hundred languages are a pedagogical strategy used in The Reggio Emilia approach to education. The Reggio Emilia Australia Information Exchange (2021), a Reggio inspired organization, describe the hundred languages as being: expressive, communicative, symbolic, cognitive, ethical, metaphorical, logical, imaginative, and rational. Landi and Pintus (2022) explain that the application of the Reggio Emilia approach is more challenging in a new context because there is no formal curriculum to follow. Their work spurs reflection and questions. For example, What does the hundred languages look like in a Reggio inspired setting outside of Italy? While investigating a Reggio inspired early learning setting in Ontario, Canada, the hundred languages were observed as a natural child's response from exploring and as a lens for educators to consider.

In the context of this research, I believe the concept of the hundred languages needs to be further discussed and described in relation to the Reggio inspired setting. Halliday (1969) suggests that the total extent and functional diversity of language in a child's life can be underestimated. He explains that from a very young age, language has seeped into every aspect of children's experiences (Halliday, 1969). In this study, languages came alive through the repetitive motions of the children's engagement with play schemas while working towards idea development. The children's hundred languages were exhibited through *purposeful interactions* with the educators, their peers, and the learning environment. The children were communicating their understandings through repetitive motions while generating, testing and/or confirming their

ideas. The languages the children were naturally exhibiting were observed as an expression of learning, as a process of how they showed their understanding. When thinking about the hundred languages it is easy to focus on materials and how children use them. If one looks at the hundred languages as something outside of a metaphor, the *language* part of hundred languages is the actual learning that takes place while the children are interacting with the environment and the people around them. It is the moments where the children were working toward idea development using play schemas that they were communicating their learning through their unique language. The hundred languages were a strategy that supported each child's learning journey as they were generating, testing, and/or confirming their ideas.

For example, Figure 5.1 below is a snapshot of an educator provoked experience which was described in Chapter 4 and labeled as "Projector Painting". When viewing this photograph, one can see the learning environment however, below I describe the the resources and setting:

> To the right of the photo there is a laptop which has a projector attached to it. The laptop was cycling between different images of outdoor landscapes which were projected on the classroom wall in front of the children. At the beginning of the activity there was a large piece of mural paper attached to the wall, however it was removed halfway through as it was falling off. The children continued the investigation by painting directly on the classroom wall. The table to the left of the photograph, where there is a child leaning over top, had a variety of different paint colours poured out in a clear container and was accessible to the children. At the beginning of the activity, each child was given a paint brush and a paint smock to wear. Throughout the investigation, calming music and nature sounds played in the background.

**Figure 5.1**
*Snapshot of a group projector painting*

When viewing this photo through a lens of the hundred languages as a repeated process, I extract the following:

> Figure 5.1 is a snapshot taken at the end of the investigation, where only a few children were left interested in the activity. At this point the children were now painting directly on the classroom walls, and they had traded their paint brushes for their hands. The child in the green smock (standing with his back against the wall) has his hands clenched together, which are completely covered in a mixture of all the provided paint colours. The child to the far right of the photo is holding her hands and showing her hands with paint on them to the group as well. The child to the far left of the photo is placing her hands in the paint container and covering them in paint. The educators at this point are out of the screen but are helping the children who are finished with the activity to clean up using

wet wipes and removing their smocks. The five children in this photo are the last of their peers who are still interacting with the paint.

In this example, the children were purposeful in their interactions with the painting experience. They engaged with the projector paint activity for 30-40 minutes using different tools such as paint brushes and their hands and different backdrops such as mural paper, the classroom wall, and a variety of images being projected on the wall. The children were engaging with the paint in a variety of repeated interactions. They were exploring the texture of the paint by squishing it in their hands. They were using the paint to make marks on mural paper and the classroom wall. The paint was a point of social interest between the group of children, as they stood around and chatted about what it felt like on their hands. The children were left to interact with the paint in ways that were meaningful to them which resulted in a collaborative mural on the wall with contributions from all the members of the learning community, including the children and their educators.

In this example, paint was far more than just a material or resource in the room. Each of the children approached the "projector painting" and repeatedly engaged with it in a way that worked for them. Through the process of engaging with the activity over a span of 30-40 minutes, and in different ways, they were able to support idea development such as: working as a part of a group, exploring a sensory experience, using their hands to make artistic representations, mixing colours, using different vessels to paint with, texture exploration etc. The process they took in the activity was their purposeful way to generate, test and/or confirm their idea development and communicate, through their hundred languages, the ways they enjoy engaging with projector painting.

**Discussion of Main Findings**

Connections were made to eight play schemas in response to the first research question, *What are the ideas that children are generating, testing, and/or confirming in a Reggio inspired learning environment*? The children's repetitive motions and actions were an indicator that the children were deepening their understanding of an idea. Many of the repetitive motions connected to eight of the most common play schemas observed in young children: enveloping, positioning, trajectory, connecting, orientation, transporting, enclosing, and rotation (Louis et al., 2013). Louis et al. (2013) explain that children engage in play schema experiences to represent their thoughts, feelings, and ideas in a symbolic way. The children engaged in several play schema experiences while developing and deepening their ideas of the world around them.

When working in the *enveloping schema*, children were observed exploring the following ideas: spatial awareness, capacity, hand-eye coordination, pincer grasp, sharing with a friend, and covering objects and themselves. Observations of the *trajectory schema* revealed that children will follow ideas related to horizontal and vertical movements, balancing, tracking an object, capacity, and making real-life connections between representations such as falling paper and snow. The *positioning schema* was observed when children were carefully placing materials in relation to other materials in the room. The following ideas were being examined in the positioning schema: horizontal and vertical lines, balance, perseverance, problem solving, and capacity. Children working in the *connecting schema* were observed linking materials together as well as pulling them apart. These connecting motions supported children in exploring the following ideas: listening to learn a new skill, beading, ideas of size (bigger/smaller), and the concept of disconnecting materials. The *transporting schema* was witnessed when children were moving objects and/or themselves throughout the learning environment. While transporting

through the environment, the children were developing the following ideas: driving a car (pretend play), scooping, and balancing with a large spoon, and practicing pre-walking skills. The children were observed placing and moving their bodies in different ways while engaging in the *orientation schema*; this included gross motor body movements across the floor of the classroom, moving their head closer to objects as well as bringing objects closer to themselves, as well as exploring different viewpoints in the classroom (crawling, walking, and being carried). While orienting their bodies in different ways, they were working towards a deeper understanding of the following ideas: gross motor skills, multitasking, cause and effect, and exploring different viewpoints. The *enclosing schema* was demonstrated when children were observed repeatedly filling up vessels and/or dumping the contents to make room for more materials to fill up the space. Ideas that surfaced during these interactions included: how the body takes up space, object permanence, as well as filling and emptying. The final play schema discussed in this study was the *rotation schema* and observations of this schema included elements connected to circular motions or materials. The children investigated the following ideas while exploring circular motions/materials: real-life connections were made to worms and glasses, the creation of a product, concepts of shape and size, and 2-D and 3-shapes.

Children use play schemas to make predictions about the world. Schemas help them to organize new information and to categorize it based on common elements and characteristics (Curtis & Jaboneta, 2019). It is important for children to engage in the repetitive motions of schema development because it helps them link their new explorations with previous experiences while they are practicing, remembering, and organizing their ideas (Louis et al., 2013). The children observed in this study were working in different play schemas while generating, testing, and/or confirming their ideas about the world while exploring in their learning environment.

From a critical standpoint, it is important to note that schema development in children is not always consistent. Louis et al. (2013) explain that schema development is not consistently displayed or used by children. The child may go some time without displaying any schema behaviour at all. They may abandon a schema or even bounce back and revisit a previous schema without warning which could be problematic for educators and the recording of their observations and documentation. Megan shared in her interview that the observation process is not always straight forward and that it can be hard to know if you are "getting it right" while watching and observing the children. She finished by explaining that if the children are interested and engaged then you are on the right path. This supports the importance of educators being flexible with their observations and documentation of the children in the learning environment.

The sub question, *In which ways might children be generating, testing, and/or confirming these ideas?* revealed connections between the ideas the children were exploring, their relationships with the educators, their peers, and resources in their environment, and the Reggio Emilia pedagogical strategy of the hundred languages of children. Rinaldi (2001) describes that for children's theories to exist and develop they need to be expressed, communicated, and listened to. As described above, the children engaged in schematic play while deepening their understandings. These engagements with schematic play supported the children as they expressed and communicated their ideas. In addition, care from their educators and reciprocal play with their peers confirmed they were being listened to. For example, in Vignette #15-Disconnecting Materials, the child expressed and communicated that they were struggling with disconnecting materials first through several failed attempts, then by holding them up to the educator for support. The educator showed she was listening to the child by responding to them in different ways. She used proximity by sitting close to the children, she verbally explained how

to disconnect the materials, and she modeled to the child how to successfully disconnect them. This example supports Vygotsky's (1994) concept of scaffolding, which is the level of performance a child can reach when supported by an expert. The expert in this case was the educator and the child was working within their zone of proximal development while engaging in the schematic play. When working in an environment filled with strong relationships, children's theories can also be observed by their peers. For example, in Figure 5.1 above, one can see the children standing together and communicating while engaging in a projector painting experience. Through their interactions with the materials and their peers, they were able to support idea development such as: working in a group, exploring a sensory experience, using their hands to make artistic representations, mixing colours, using different vessels to paint with, and texture exploration etc.

The children's schematic play engagements were complex and varied due to their relationships and interactions with the resources provided in the learning environment. It was through their relationships with the resources, learning environment, peers, and educators, that the children were able to practice their hundred languages. It appeared that the more they used the repetitive schematic motions with the resources available to them, the better they were able to master the skills they were practicing. It is through this process that the children used their hundred languages to communicate their learning. The materials used in this study acted as active participants in the children's investigations (Pacini-Ketchabaw, Kind & Kocher, 2016), and include some of the following examples: cardboard, tweezers, markers, scarves, shredded paper, corks, wooden beads, large paper clips, metal bowls, projector, and the children's bodies (a full list of materials can be found in table 4.1 in chapter 4). Pacini-Ketchabaw et al. (2016) describe that children and materials live in tangled lives, and that they both transform through

their mutual encounters in the learning environment. In Reggio Emilia inspired practice, the children's use of materials in the learning environment to investigate and develop new understandings can be considered and connected to the strategy of the hundred languages of children (Harcourt, 2015).

The second research question *How are educators fostering children's development of their ideas in a Reggio inspired learning environment*? revealed five main themes. First, educators were fostering the children's development through the preparation of the classroom and the provision of purposeful materials in the environment. The educators reported that when preparing the classroom and selecting materials they followed the children's lead and interests by listening to and closely observing them. They included materials that are inspired by the children's home life such as door handles and telephones and included natural elements and simulated real-world experiences. They emphasized that when selecting natural elements to bring into the room, the children's safety was most important, and this connected to determining which materials and experiences were developmentally appropriate. The educators would ensure the materials coming into the room were not hazardous and could not cause harm to the children while they were interacting with them. The educators also fostered the development of the children's ideas by provoking the children's experiences throughout the day. For example, the educators would provide planned opportunities for the children such as mural wall painting, wind tunnel explorations, and water play based on their past observations of the children and their interactions in the room. These interactions were usually initiated by a planned provocation set out by the educators and the children were free to engage with them if they were interested to do so. The educators reported that they based these provocations and experiences on their observations of the children and their current interests. In a critical view, Langford (2010)

suggests that focusing solely on a child-centered approach can lead to a diminishing view of the early childhood educator in the learning setting. Langford (2010) suggests a more democratic approach which positions both the child and the Educator at the center of a pedagogy as equally important to the learning process. This reconstruction of child-centered pedagogy in the early years would work to support social change and enhance the low status and invisibility of early childhood professional in the field (Langford, 2010). The reconstructed child-centered pedagogy Langford (2010) describes requires educators who are knowledgeable in early childhood education and who can use their expertise to support and complement the children's interests in their daily interactions. Ideas from this research study, including the educator's ability to support and implement explorations based on the children's interests, confirms Langford's (2010) idea of reconstructed child-centered pedagogy. The educators in this study followed the children's lead, however they were also an essential part of the quality learning that was observed in the environments. Through my observations of the interactions in the four learning environments, I would argue that both the children and the educators were equally important and were at the center of the pedagogy.

The daily interactions between the children and the educators also supported and fostered the children's exploration of their ideas. For example, the educators provided materials for the children when needed, such as paint brushes and smocks, as well as, interacted with the children while they were exploring the classroom by supporting the children in communicating with their peers. It was evident in the observations that the educators interact with the children in meaningful ways throughout the day. These interactions included the educators positioning themselves at the children's level, naming the children's learning, and joining in on the children's play experiences.

The educators fostered the children's explorations but ensured their safety and welfare in the learning environment which supported the children in feeling safe and comfortable to explore their ideas. This was observed in a variety of ways, such as: supporting the children while using the bathroom/changing their diapers, helping children wash their hands, wiping/blowing the children's noses, supporting children during risky play experiences, providing support when they were distressed or hurt, supporting the children in navigating their relationships with their peers, and ensuring the classroom space was clean and safe for the children to explore. The last theme that emerged in connection to the educators fostering the children's explorations in the learning environment was the interest in ongoing professional development. The educators shared that professional development is deeply supported by the center and management team. They reported that the professional development opportunities were vast and included several different options such as: monthly staff meetings, tours of other early learning centers, conferences, workshops, professionals in the field etc.

As described by Wood, Thall and Parnell (2015), the educators used Reggio inspired practice to set up environments which they trusted to support student learning and act as a third educator in the room. In addition, the educators' educational backgrounds and years of experience in the field support a high quality of "Reggio inspired" approaches in this educational setting, as set out by Rivkin (2014). As described by Edwards, Gandini, and Forman (2011), North American educators can use Reggio inspired practice to provide rich early learning environments when they are willing to adapt, deeply explore Reggio approaches, and use them to build on the important parts of the culture and community they serve. The educators showcased this through their deep commitment to professional development and willingness to explore a variety of early learning approaches. The educators played a key role in facilitating the children's

explorations as they deepened their understandings and explored their ideas in this Reggio inspired setting.

### *Connections to the field of Early Childhood Education*

**Researching Children Reveals Valuable Information About the Development of Their Ideas**. Mukherji and Albon (2018) express that researchers can learn a great deal about children's lives when they take the time and put in the effort to listen to them. Wexler (2004) describes children as powerful and resourceful contributors who are capable of highly complex ideas. The children in this research study displayed their highly complex ideas through the variety of rich ideas that emerged through observations and their engagement in the learning environment. Some of the complex ideas that were observed include: the ability to practice perseverance when faced with a challenge, tracking and catching a moving object several times, balancing a moving object on a platform, and engaging with two-dimensional and three-dimensional concepts of space.

Often, children are removed, or their perspectives are not included, in research studies because they can be viewed as incapable or irresponsible by adults (Montandon & Osiek, 1998, and Wexler, 2004). The children's perspectives were documented by adapting a lens of the hundred languages of children, a principle of the Reggio Emilia approach to early learning. In Reggio philosophy, children are rich in potential and resources right from the moment of birth (Dahlberg & Moss, 2006). Observing the children through a lens which supports their hundred languages allowed for a variety of multimodal representations of their perspectives to be uncovered. Jewitt (2008) connects the use of a multimodal perspective with a post-structural stance and explains that meaning making happens through situated configurations of multiple "modes". The term "modes" in this example refers to the resources used during meaning making.

Rowsell and Walsh (2011) explain that individuals use different kinds of "modes" when engaging in meaning making. In this case, the children used different "modes", referring to resources and materials provided to them, when meaning making and exploring their ideas in the learning environment. Figures 4.12, 4.13, 4.14, and 4.15 in chapter 4 list the resources and materials that were available for the children to explore in each of the four learning environments observed as well as a blueprint of each environment. Table 4.1 in chapter four lists the materials the children used in connection to the theories they were exploring. There were rich "modes" available to the children to support multimodal explorations in connection to their idea development. The multimodal, post-structural approach of this study supported the children in revealing valuable information about the learning process and the development of their ideas. The children's valuable perspectives contributed to the richness of the key findings.

**Children are active participants in their learning.** Dewey's social learning theory describes learning an active process where children need to have the opportunity to think for themselves (Dewey, 1938). Williams (2017) explains that in learner-centered classrooms, like ones inspired by Dewey's social learning theory, the children are observed learning-by-doing using hands-on opportunities. In this study, the children took an active role in their learning by engaging in different play schemas while deepening their understandings of their ideas. Several hands-on learning opportunities were observed, such as the wind tunnel, painting the room, and water exploration. Curtis and Jaboneta (2019) support active play as fundamentally connected to schema explorations. They describe a deep connection between active schematic play and brain development, and that children have a natural interest in moving their bodies which helps to develop connections in their brain that are essential to the rest of their lives (Curtis & Jaboneta, 2019). Although the play schemas were analyzed individually in the previous section, it is

important to note that there were examples of the children engaging in more than one play schema at a time. This notion is supported by Nutbrown (2011) who explains that children will engage in more than one play schema while they are actively exploring and deepening their ideas and understandings. Athey (2007) extends this thought and describes that children's early experiences with play schemas set the foundation for their learning later in life. Several of the ideas the children were exploring, such as pincer grasp and hand-eye-coordination, are fundamental skills the children can build on as they engage in developing their understanding of more complex ideas.

**Educators play a significant role in the impact of the children's experiences.** Essa and Burnham (2019) support the importance of high-quality early learning experiences and their impact on developing a sense of joy and enthusiasm in children when they interact with the world. Nutbrown (2011) explains that adults play an important role in effective early learning opportunities and that children need consistent adults in their everyday lives that know and understand their needs. The educators played a significant role in the children's lives by providing them with child-led experiences which supported their current ideas. The adults provided carefully selected materials and opportunities in a safe and nurturing environment. It is through these intentional interactions that the children were able to engage in higher-level thinking and rich learning opportunities. Nutbrown (2011) explains that when children can locate what they need and know who to ask for support, they are better able to engage in deep thinking and learning. This concept was observed through several different approaches, such as providing materials for the children at their level and having responsive educators who were alongside the children in their play, providing materials as the play unfolded. As set out by Ontario's pedagogy for the early years, it is the role of the educator to create environments which support active and

meaningful engagement and exploration which focus on the children's theories and investigations through play (Ontario Ministry of Education, 2014). Rather than being the sole planners of programs, educators collaborate with the children to develop programs that meet their needs and curiosities.

**Children and Educators Co-construct Idea Development.** Harcourt (2015) describes that in the Reggio Emilia approach to learning there is no formal or predetermined curriculum to be followed, but rather the learning opportunities are developed through intentional observations of the children's interests and what the educators reveal as important from their documentation. This strategy is referred to as *progettazione* in Reggio, and requires a daily practice of observation, interpretation, and documentation of the children by their educators (Rinaldi, 2006). Megan shared in her interview that documentation, in the form of photographs and anecdotal notes, is used in their learning setting as a reflection piece for the children and is placed at the child's level so they can revisit past learning experiences while engaging in the environment. Cassy also shared the importance of documenting the children's learning in the classroom, and that they include the children's artwork on the walls as documentation because the children gravitate towards it and show joy when they see their creations displayed in the room.

In the context of this research study, the children's development of their ideas was supported by a reciprocal relationship between them and their educators. The richness of the children's interactions would not have been the same if one of the key players, the children, or the educators, was removed from the learning setting. For example, during the large group projector painting shared in chapter 4, the interactions between the children and the educator were the springboard for their large creation. The children would seek the educators' support in collecting the tools (paint brushes and paint) to support their exploration, and the educators

joined their play while posing thought provoking questions to extend their thinking. The concept of *reciprocity*, an environment created by educators in response to their observations of the children in the room (Edwards, 2011), encourages a view of co-construction between the children and their educators. Reciprocity is also a key component of Lev Vygotsky's zone of proximal development.

This idea of reciprocity between the children and their educators challenges the notion of "child-led" learning experiences held by some North American educators. As educators develop their pedagogy and understanding of early childhood education, there is a misconception about what the role of the educator looks like in a child-led, play-based context (Bubikova-Moan, Hjetland & Wollscheid, 2019). The data in chapter four supports the importance of reciprocal relationships between the children and their educators. There were learning opportunities presented which were completely initiated by the child, for example in Vignette #17- scooping/balancing on a spoon, where the child worked independently in the room using a large spoon to transport materials. There were learning opportunities which were educator initiated, for example the wind tunnel, projector painting, and water exploration. There were also opportunities presented where the child and educator worked as a team in developing ideas, for example in Vignette #13- Following Direction, where the child and educator worked together connecting materials. These examples showcase reciprocity between the child and educator and its importance to the learning process. These examples also support the importance of the process of learning over the product and why it is important for educators to engage in ongoing observation and documentation.

## Key Conclusions

There are three key conclusions I will discuss as take-aways. These conclusions include the themes of power between the educator and the children in the learning environment, relationships between the children and their educators, their peers, and the learning environment, and risk taking among the children which played an important role in the study and the discussion of the main findings.

### *Power*

As described by Wexler (2004), Dahlberg & Moss (2006), Edwards (2011) and Fyfe, (2011), in a Reggio context, children are considered powerful, resourceful, and capable human beings who can form highly complex ideas. It was evident through my observations within this Reggio-inspired setting that children were considered powerful human beings. While interacting in the learning environment, the children were observed taking the lead in their learning. They were engaging with the environment and the available resources at their own pace, while the educators acted as a guide on the side of the room. Mukherji and Albon (2018) explain that post structural research works to deconstruct dominant discourses and looks for alternative ways of thinking. The children in this study take the lead in their learning and hence one sees a shift in power and its connection to knowledge development. The children were observed as knowledgeable contributors to the learning environment. The classroom surfaces, walls, and even the ceiling contained a variety of their works and explorations in the form of photographs, hand-written verbatim quotes, and work samples. The rooms were set up with child-sized furniture and there were a substantial number of resources available at the child's level for them to engage with when needed. From my perspective, there were many moments where the power dynamic between the children and adults in the four learning environments was neutral.

For example, Figure 5.2 below is a snapshot of a video observation in one of the smaller toddler learning environments. One can see the researcher looking in from the window.

**Figure 5.2**
*Snapshot of an example used to support the idea of power in the learning environment.*

At this moment, there are four children and one educator within the space. When looking at this photo through the lens of power, I can see several elements to support a neutral approach between the children and the adult in the room. An element I am drawn to is the position of the educator within the setting. They are sitting in the middle of the room and at the child's level. The moments surrounding this snapshot showcase the educator maintaining this position while the children explored around her. The children would often approach the educator, and she would join in on their exploration. For example, in the photo, a child has brought two circular objects up to the educator and covered her eyes with them. The video then goes on to reveal the

educator taking the same objects and placing them over the child's eyes, which was followed by laughter from both. During this interaction, the surrounding children are looking over and watching, using their observations to extend their own play. For example, the child second from the right put the paper towel roll up to his eyes, mimicking what he observed. The child to the left of the photo stopped her play when she heard the laughter and turned her attention to the interaction and began to smile and laugh. In this organic interaction, there is neutral power between the educator and the children. The children were guiding their own explorations while approaching the educator at their own will. The educator had positioned herself in the room, so she was accessible to all the children and was interacting with them as they approached.

Foucault (1987) and Freire (1982) challenged socially accepted ideas of power dynamics, such as traditional learning settings where educators hold the power over the learning opportunities and set up pre-determined play experiences, for example hand-print painting and worksheet activities. Freire (1993) explains that in a neutral power dynamic both the adults and children guide the learning process. In this Reggio inspired setting I observed the educators support the children and their unique idea development by providing a rich learning environment where the children could take charge of their learning and engage with the resources that were interesting to them. MacNaughton (2005) describes that for educators to rethink their understanding of power in the learning environment they need to engage in deep critical reflection on their pedagogy through a post structural lens. In these Reggio inspired environments, the children were given the power to choose their explorations and were able to generate, test, and/or confirm their ideas as they naturally unfolded. When educators let go of the power in the learning environment, they open opportunities for the children to be purposeful human beings.

***Relationships***

Gandini (2011) places the responsibility of building relationships on the educator in the room and explains that they need to set up the learning environment to foster interactions between the children and their peers, their educators, and the classroom materials. *How Does Learning Happen? Ontario's Pedagogy for the Early Years* (Ontario Ministry of Education, 2014) reveals that quality early learning pedagogy places relationships at the center of early childhood education by making it one of the primary goals of early learning in Ontario. The importance of relationships surfaced in this research study when coding the initial video data. The theme of relationships appeared frequently in the initial coding process and needed to be teased out into smaller categories. There are several different types of relationships in an early learning community. For example, there is the direct relationship between the child and the educator, the children and their peers, as well as the children and the learning environment and materials. Each of the dynamic relationships needs to be fostered and supported in the learning setting to ensure the children feel safe to test their ideas and push their thinking forward.

Clinton (2020) illustrates that educators need to reflect on their roles in the classroom because it is their relationships with the children in their care that will have a lasting influence on their development. In this Reggio inspired setting, the educators showcased the importance of relationships through their interactions with the children in the learning environment and through their commitment to learning while sharing their pedagogies during the interviews. The children were supported by the educator through the provision of a rich and safe learning environment. The educator selected resources in the room based on the children's interests and abilities. They made themselves available to the children by meeting them at their level and scaffolding their wellbeing by helping them with hygiene tasks such as washing hands and toileting.

Children have a unique relationship with the materials in their environments when they are supported in selecting resources that are interesting to them. Kuby and Rucker (2016) explain that humans and nonhumans can work together as active agents while producing knowledge and ways of becoming together in the world. They explore the connections between materials, time, and space in the classroom setting and how they work together to produce realities. What was unique about the explorations across the four learning environments was that some of the children were working on the same ideas; however, they were using vastly different modes to extend their thinking. For example, there were at least five different observations of children working on the concept of balancing. One child was using a large plastic spoon to balance. Another child was practicing balancing using a tree stand and star-like manipulatives, while another child was using wooden circles and trying to balance on a cardboard cutout. Each child was using different modes to practice the skill of balancing. While interacting with their chosen modes, the children were deepening both their relationships with the resources as well as their understanding of the concept of balancing. Jewitt (2008) specifies that it is essential for educators to provide a variety of manipulative materials to foster and support multimodal explorations in the classroom. The children will naturally gravitate toward the resources that feel comfortable to them and that best support their investigations. In turn, they come to understand the multi-modal capacity of materials through their investigations.

Figure 5.3 is a snapshot of a whole group interaction which showcases the idea of relationships at the center of the learning experience. The experience is described in detail in chapter four under educator provoked/supported experience: water exploration.

**Figure 5.3**
*Snapshot of an example used to support the idea of relationships in the learning environment.*

By observing this photo through the lens of relationships, I am immediately drawn to the proximity of the educators to the children. Both educators have positioned themselves next to or behind a small group of children and have tried to get closer to their level by bending over or kneeling. You can see one educator making direct eye contact with a child on the left-hand side of the photo. If listening to the video accompanying this photo, one would hear the educators engaging in conversation with them. For example, at one point two of the children were interested in the same tool. The educator noticed this, communicated that there were two of the same tool, and offered the second tool to the child. As the water exploration came to an end, the educators supported the children in drying their hands. Bucher and Pindra (2020) support this notion and explain that learning occurs within the context of relationships, including relationships with both materials and responsive educators. The educators in this snapshot were responsive to the children's needs by offering materials and supporting the children in overcoming potential conflict during play.

In this photo, one can also see how the educators set up the environment to support the children in developing relationships with each other. The activity was set up at a long table with two different water sources to share among five children. This set-up allowed the children to work near one another. The educators ensured that there were enough supplementary materials so that the children could share the water sources but have their own materials to manipulate and engage in the play opportunity. This experience supported the children in playing alongside each other and sparked interaction among them. Through these interactions, the children were able to build on their relationships with peers while generating, testing and/or confirming their ideas.

***Risk-taking***

The Reggio Emilia approach is built on a strong image of the child, where they are seen as curious and intelligent from birth (Arseven, 2014). I observed the children's curiosity being nurtured in this Reggio inspired setting through risk-taking in the learning environments. There were several instances where the children were engaged in what would be considered risk-taking. Rather then being deterred from the experience (as they might have been in a different early learning environment) they were supported and nurtured by the educators through positive interactions and proximity. Nutbrown (2011) describes that when children can predict how an adult will respond in different situations, they are more likely to take risks and try new things. Through developing trusting relationships with the children, as described in the section above, the educators are supporting the children in feeling safe to take risks. An example of risk-taking observed across all the learning environments included children using their bodies to climb up on furniture and windowsills. There were several instances where the children would engage in risk-taking surrounding art experiences, where they would use paint and markers on their bodies and classroom walls. I also observed individual children working to overcome their own trepidations

through exposure to a learning opportunity that was not of interest at first, however with support from the educators, were able to take the risk and engage in the opportunity. This type of pedagogy, guiding children in risk-taking, supports the children in generating, testing, and/or confirming a vast number of ideas, rather than limiting their experiences.

**Figure 5.4**
*Snapshot of an example used to support the idea of risk-taking in the learning environment.*

Figure 5.4 showcases a snapshot of three different examples of risk-taking observed in this learning environment at one moment in time. The first example involves the children by the window and the educator sitting below them with her outstretched hand. There was interest from several of the children to climb on the table and windowsill in front of the large window throughout my observations. Prior to this photo, the educator was sitting at the round table with a group of children while the two children closest to the window were climbing up and walking back and forth on the windowsill. The educator noticed this happening, and then positioned her

body to move closer to the children and even offered support by reaching her hand up in their direction. Typically, in an early learning setting, this type of behaviour would be re-directed, and the children would be told to get down for safety reasons. From my observations, this classroom used this experience as a chance for the children to explore their physical development and to test the concept of balance. Instead of redirecting, they would talk the child through the activity and offer support and proximity to help them feel safe to practice these skills. I believe the climbing and balancing I observed to be a safe risk for the children to explore and test their bodies. The table was at a child's height and close to the ground so if they were to have fallen, it would not be far. In addition, the educator used their presence to support them in feeling safe. This was an excellent example of how the classroom was set up as the "third teacher" in the room. The table was thoughtfully placed in front of the window, an area which was described as a popular place for the children to play during the educator interviews. The educators created a safe space for the children to explore their natural curiosity of looking out of the window.

The second example of risk-taking showcased in Figure 5.3 involves a group of children sitting at the round table. From the angle of the camera, one cannot fully see what they are engaged with so I provide some context here to support the photo. After reading the story 'Box' by Min Flyte with a small group of children, the educator offered a colouring experience at the table. The children came and went as they pleased, and when they sat down the educator gave them each a square piece of paper and asked them, "What will you do with your box?", which was a line taken from the book. Along with the piece of paper, a container of markers was also offered at the table. The educator sat with them and engaged in conversation as they shared what they would do with their own box. The children then used markers to make representations on the square pieces of paper. At one point, a child started to use the markers to colour on their

hands. The educator noticed this and asked them “does that feel good on your hands?” The child responded that it did and continued to use the marker to colour on their hands. It didn’t take long for the other children to observe this sensory play and joined in by colouring on their hands as well. From my experience in other early learning environments, this type of sensory play would be re-directed, and the children would be asked to wash up and to colour only on the paper provided. As this experience unfolded, the children were guided by the educator. Some of the children were offered a new piece of paper where they used the marker on their hands to make hands prints while other children started to colour on different parts of their bodies such as their arms and legs. As the play came to an end, the educator supported the children using soap and water to remove the marker and then they went off and continued with other play.

The last example of risk-taking I will discuss from Figure 5.3 includes the two children closest to the camera by the long rectangular table. From the snapshot shared, this interaction does not look like an obvious example of risk-taking. It was my assumption from looking in that these two children were sisters. This is because they were dressed in the same clothing. Their hair was done the same way and they looked very similar. At the beginning of the observation, which also correlated with the beginning of the day, one of the two sisters was always near an educator in the room. The child was not interested in engaging in the classroom and the educator used their proximity to help the child to feel safe. Wherever the educator moved, the child followed very closely. The other sister entered the classroom and was exploring right away. Towards the end of the hour observation the first sister showed signs of feeling more comfortable in the setting. This is what you see in Figure 5.3, where she is positioned next to her sister rather than the educators in the room. From my observations, this looked like the next safe space for her, and it took some risk on her behalf to make the adjustment.

**Contributions and Implications for Early Childhood Education Pedagogy and Practice**

This research study contributes to literature on quality early childhood education pedagogy and practice. Brown (2015) describes that in a high-quality early learning environment children can use a wide range of materials to express their thinking in a variety of ways. This study reveals how children use the rich materials provided in the classroom by their educators to support their explorations and to make connections about the world around them. The children were able to show their thinking in a variety of ways by engaging in and expanding on their current play schemas using repetitive motions. The educators and toddlers worked collaboratively to expand upon their ideas and to create rich learning opportunities and experiences.

This study contributes to the literature on Reggio Emilia inspired practice in North America, more specifically in the Ontario early learning context. Edwards, Gandini and Forman (2011) describe that Reggio inspired practice, outside of the Italian context, requires a deep translation of approaches, educators' willingness to adapt, and rich learning environments which build on the important parts of their culture and community. The observations and conversations that took place in this study support these qualities of Reggio inspired practice and found them to be embedded in the program. The educators in this study showed a deep passion for ongoing professional development, especially in Reggio Emilia. The learning environments observed were rich in materials, opportunities, and interactions. This was observed through the children's interactions in the rooms, and their ability to use the space effectively to explore and test their ideas. Rivkin (2014) explains that the quality of Reggio inspired practice is influenced by the educator's educational background as well as their years of experience in the field. The educators had completed their Early Childhood Education diploma (aside from one educator who was a

student completing their psychology degree). All the educators had engaged in some form of professional development within the past year, and several spoke about opportunities where they were able to explore other Reggio inspired learning centers. The educators also have rich experience in the field and four of them have been working in early childhood education for 5-10 years.

This research offers insights and implications for early childhood educators, whether they are new to the field or have been teaching for many years. This research can be mobilized in post-secondary institutions focusing on the education of early years professionals by embedding the main findings in course work and/or readings on topics such as Reggio inspired practice, quality education, or children's theories. At the post-secondary level, this research could inform policy related to the certification of early childhood educators and could include a more rigours approach to professional development and even consider adding specializations in the arts, early mathematic, language and literacy, self-regulation. The research can also be mobilized for current early years professional in the field through its inclusion in professional development opportunities and/or presentations. In addition, the study reveals the importance of materials and opportunities provided in early childhood settings. It was through these rich environments prepared by the educators and in consultation with the children, that meaningful learning emerged. The research reveals the importance of both the children's and educators' roles in the creation of the learning environment. Strong-Wilson and Ellis (2007) describe that rich learning environments are thoughtfully and intentionally designed using the children's interests to spark their curiosity. The educators shared that they use the children's interests and current explorations to fuel their ideas and designs for the classroom. This was accomplished by engaging in learning experiences alongside the children, and carefully watching and observing

how they are interacting in the space. Gandini (2011) describes that when educators can walk alongside the children, and remain flexible and responsive, they are able to provide environments that best support their needs. Children and their educators work as co-collaborators in the learning environment and when supported in the room through trusting relationships, children are active participants in their learning.

**Limitations**

One of the biggest limitations to this study was the COVID-19 restrictions at the time of data collection. The research study was adapted to meet the COVID-19 research regulations at Lakehead University during the summer months of 2021. To meet the COVID-19 restrictions enacted by the University for in-person research at the time of data collection, the research was conducted at a distance with no face-to-face contact between the researcher and the participants in the study. To ensure the safety of the educators, the children, and the researcher in the study, the educator interviews were conducted via Zoom videoconferencing software. Classroom observations were conducted by viewing the children and educators through designated windows, while I remained outdoors recording handwritten notes. In addition, two GoPro cameras were pre-installed in the classrooms to capture and record the children's interactions during each observation, which allowed for an in-depth review later. I was able to control the GoPro cameras from my cell-phone device, which I could turn on, start recording and stop recording when needed, without having to enter the child-care center. The GoPro cameras and application on my phone provided audio to support my through-the-window observations and handwritten notes. Due to these restrictions, I was also limited in the settings I was able to use and was very fortunate to have found a childcare center that was willing to work with me and support this research. This study explored one Reggio-inspired site with a smaller sample size. I

was not able to conduct comparisons to other pedagogical approaches in the early years, such as Montessori, Waldorf, etc. Finally, I was limited to a mini-ethnographic approach due to the time of data collection. By the time research ethics was obtained to move forward, it was nearing the end of the calendar year at the childcare center. Consequently, I was able to observe for 5 weeks before the children would be graduating, moving rooms and possibly educators for the next calendar year.

**Suggestions for Future Research**

To better understand the implications of the research study results, future studies could address a larger population of toddler-aged children and their educators. This study looked specifically at toddler-aged children and their educators in a Reggio inspired early education setting. Future studies could draw comparisons from a variety of different early learning settings, such as home childcares, Montessori inspired practices, or government funded organizations. What would a comparison of these different approaches to early learning bring to light? How can the inclusion of children's voice support these programs? Outside of Reggio inspired settings, is importance placed on the learning environment and materials? In addition, a longer duration of observation would support a more diverse data set and possibly deeper connections to idea development in toddlers.

In this study, I used unique research methods to elicit children's perspectives during a global pandemic, where working face-to-face with children was not permitted. These methods include through-the-window observations, zoom interviews, and video-based observations using GoPro equipment. Future research should focus on using these unique methods, including through-the-window observations and remote video-based observations in the classroom, to

access populations of children where face-to-face observations are not possible (i.e remote settings where travel is impossible due to inaccessible roads or weather conditions).

Future studies, where researchers work alongside children, is a viable option to support the inclusion of children in the research process. A way to give voice to children in the research process is to use visual sociology. When collecting data with children, it is important to provide them with situations where they feel comfortable and confident along with the tools that allow them to feel empowered. Clark (1999) articulates that status quo research tools, such as interview and surveys, need to be transformed to allow for full access to children's meanings and understanding, which can be done by looking for tools that play on their strengths and that are active and accessible and not reliant on the written or spoken word (Moss & Clark, 2011). Research tools that support a visual component such as photo analysis and video observations, support the authentic voices of children in research. Future research should continue to support children's voice and participation in the research process.

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## Appendix A

**Poem: No Way. The Hundred is There (by Malaguzzi, 1996)**

### No Way. The Hundred is There.

The child is made of one hundred. The child has a hundred languages a hundred hands a hundred thoughts a hundred ways of thinking of playing, of speaking.

A hundred always a hundred

ways of listening of marveling, of loving a hundred joys

for singing and understanding a hundred worlds to discover a hundred worlds to invent a hundred worlds to dream.

The child has a hundred languages

(and a hundred hundred hundred more) but they steal ninety-nine. The school and the culture separate the head from the body.

They tell the child: to think without hands to do without head to listen and not to speak to understand without joy to love and to marvel only at Easter and at Christmas.

They tell the child: to discover the world already there and of the hundred they steal ninety-nine.

They tell the child: that work and play reality and fantasy science and imagination sky and earth reason and dream are things that do not belong together.

And thus they tell the child that the hundred is not there.

The child says:

No way. The hundred *is* there.

*Loris Malaguzzi*

(translated by Lella Gandini, 1998)

*from the Catalogue of the Exhibition "The Hundred Languages of Children", © Preschools and Infant-toddler Centres - Istituzione of the Municipality of Reggio Emilia, Italy Reggio Children, 1996*

## Appendix B

## Information Letter for Parents/Guardians

**Project Title:** Children's Theories about the World Around Them: A Study Exploring the Hundred Languages of Children and How Educators Support Them
**Investigator:** Kelsey Robson **Date:** May 2021
Dear Parent/Guardian,

I am conducting a study on **Children's Theories about the World Around Them: A Study Exploring the Hundred Languages of Children and How Educators Support Them** and would value your child's input into the current theories they are generating, testing, and confirming in their classroom. Your child is invited to participate in this research study as part of my doctoral dissertation in the Faculty of Graduate Studies at Lakehead University. I am a Doctoral student in the Faculty of Education and am the principal investigator on this research project. Dr. Sonia Mastrangelo, Associate Professor in the Faculty of Education (Orillia Campus) is my supervisor. Taking part in this study is voluntary. Before you decide whether or not you would like your child(ren) to take part in this study, please read this letter carefully to understand what is involved. After you have read the letter, please ask any questions you may have.

The purpose of this research study is to explore the concept of the *hundred languages of children* and how students in a Reggio Emilia inspired classroom communicate their theories about the world around them. The hundred languages of children is a metaphorical term used in the Reggio Emilia approach to describe the verbal and non-verbal modes of communication children use to express themselves so that they can develop connections to the theories and apply them to the world around them (Harcourt, 2015). The hundred languages are seen in the ways children use materials and resources available to them to investigate and develop new understandings about the world around them (Harcourt, 2015).

Given the current physical distancing protocols in place, the study will take place at a distance with no direct contact. The research is being conducted over 2 months and will include a total of twelve visits to four different classrooms in your child's childcare center. During the visits to [redacted], I will be observing the children from outside the classroom using the classroom windows and will be video recording their interactions in the classroom for further analysis at a later date. Stationary cameras will be pre-installed in the corners of the room and I will capture your child for fifteen minutes during a free play period in the classroom. Only the camera closest to the child being observed will be turned on to record their interactions and will be done using a device from outside the classroom. When it is your child's turn to be observed I will conduct a live video call into the classroom to introduce myself and inform them I will be recording them. If your child shows any signs of discomfort with being video recorded, I will immediately stop.

Your child's participation in the study is completely voluntary and you may choose for them to stop participating and withdraw from the study at any time and for any reason without penalty. Your decision for them to stop participating, or to not participate whatsoever will not affect: their relationship with the researcher, Lakehead University, or any other group associated with this project either now, or in the future. In the event that you withdraw them from the study, all associated data collected will be immediately destroyed.

There is no foreseeable risk to participating in this study because there will be no contact between the children and the researcher and no interruption to the flow of the program. The

audio and visual data collected is intended to inform my research on early learning environments and understanding of the *hundred languages of children*. This work will benefit the field of early childhood education by contributing to the available research on Reggio Emilia inspired practice and will also give voice to children in matters that directly impact them.

At no time will any participant in the research be identified and the raw data will only be seen by the project investigator and project team member listed below. Unless you choose otherwise, all information supplied by the teacher and students during the research study will be held in confidence and unless you specifically indicate consent, your child's name will not appear in any report or publication of the research. The findings of this research may be presented at conferences on early learning and in peer-reviewed journals. In addition, the data in aggregate and de-identified format, may be used by [redacted] for quality assurance purposes, or in conference presentations/posters. Confidentiality will be provided to the fullest extent possible by law. The data will be collected both by handwritten field notes and by audio/video camera and will be safely stored in a locked filing cabinet in my home office. Only the project investigator and supervisor listed on this application will have access to this information. In line with the requirements of the Research Ethics Board, the handwritten notes and a flash drive with the audio/video data will be securely stored in the Faculty of Education for a minimum of 5 years once the project is complete. Attached to this letter is a consent form and by signing it you have given consent for your child to take part in the research and to be audio/video recorded for data collection and analysis purposes.

The research project has been approved by the Lakehead University Research Ethics Board which conforms to the standards of the Canadian Tri-Council Research Ethics guidelines and the [redacted] supports this research study. Should you have any questions or concerns, please feel to contact me via email at [redacted] or Dr. Mastrangelo at [redacted] If you have any questions related to the ethics of this research project and would like to speak to someone outside the research team, please contact Sue Wright at the Research Ethics Board at [redacted] or [redacted] or [redacted] at [redacted]

A report of my findings will be shared with [redacted] at the end of the study and copies can be made available to you as well. If you are interested in receiving an electronic summary of the research results at the completion of the research study, please send an email to Ms. Kelsey Robson [redacted] with your request.

Please do not hesitate to contact us if you have any concerns.

Sincerely,

Kelsey Robson- [redacted]

Cc: Dr. Sonia Mastrangelo- [redacted]

LU Research Ethics Board- [redacted]

**Parent/Guardian Consent Letter**

May 2021

Dear Parent/Guardian & Potential Participant:

By signing this consent form,

- You are acknowledging that you have read and understood the information on the previous letter about the research study and agree to have your child participate in the research.
- You acknowledge the potential risks and benefits of the study and what they are.

- You are aware that your child's participation is voluntary and that you can withdraw them from the study at any time.
- You are aware that the data your child provides will be securely stored at Lakehead University for a minimum of 5 years following the completion of the project. Upon your request, the findings of the study will be made available to you electronically.
- You acknowledge that your child will remain anonymous in any publication/public presentation of research findings unless you explicitly agree to have their identity revealed.

After signing this consent form, you can return it with your child to [redacted]. Thank you for your consideration. Please do not hesitate to contact us if you have any concerns.

Ms Kelsey Robson- [redacted]
Principal Investigator
Dr. Sonia Mastrangelo- [redacted]
LU Research Ethics Board- [redacted]

**Child's Name:** **Date of Birth:**

_____

**I agree to having my child video-taped as part of this study YES / NO (please circle one)**

**Parent/Guardian Signature**

_____

**Date**

## Appendix C

## Information Letter for Educators

**Project Title:** The Hundred Languages of Children: A Study exploring Children's Voice and How Educators Support Them
**Investigator:** Kelsey Robson **Date:** May 2021

Dear Educator,

I am conducting a study on **Children's Theories about the World Around Them: A Study Exploring the Hundred Languages of Children and How Educators Support Them** and would value your input. You are invited to participate in this research study as part of my Doctoral dissertation in the Faculty of Graduate Studies at Lakehead University. I am a Doctoral student in the Faculty of Education and am the principal investigator on this research project. Dr. Sonia Mastrangelo, Associate Professor in the Faculty of Education (Orillia Campus) is my supervisor.

The purpose of this research study is to explore the concept of the *hundred languages of children* and how students in a Reggio Emilia inspired classroom communicate their theories about the world around them and are supported by their educators. The hundred languages of children is a metaphorical term used in the Reggio Emilia approach to describe the verbal and non-verbal modes of communication children use to express themselves and to develop connections to the theories they have about the world around them (Harcourt, 2015). The Hundred languages are seen in the ways children use materials and resources available to them to investigate and develop new understandings about the world around them (Harcourt, 2015).

Given the current physical distancing protocols in place, the study will take place at a distance with no direct contact. The research is being conducted over 2 months and will include a total of twelve visits to four different rooms at the childcare center. Prior to the first visit, we will meet over Zoom for an informal interview to discuss your classroom and teaching philosophy. The informal interview will last between 30-40 minutes. All questions will be sent prior to the online Zoom meeting and you are able to skip any question you do not wish to answer. During the visits to [redacted], I will be observing the children from outside the classroom using the classroom windows and will be video recording their interactions within the classroom using pre-installed video cameras for further analysis at a later date.

Your participation in the study is completely voluntary and you may choose to stop participating at any time and for any reason. Should you choose to participate, you may skip any question you wish during my interview and may choose to withdraw from the study at any point without penalty. Your decision to stop participating, or to refuse to answer particular questions, or to not participate whatsoever will not affect: your relationship with the researcher, Lakehead University, your employment with [redacted], or any other group associated with this project either now, or in the future. In the event that you do withdraw from the study, all associated data collected will be immediately destroyed.

There is no foreseeable risk to participating in this study because there will be no contact between you and the researcher and no interruption to the flow of the program. The audio and visual data collected is intended to inform my research on early learning environments and understanding of the *hundred languages of children*. This work will benefit the field of early childhood education by contributing to the available research on Reggio Emilia inspired practice and will also give voice to children in matters that directly impact them.

At no time will any participant in the research be identified and the raw data will only be seen by the project investigator and project team member listed below. Unless you choose otherwise, all information supplied by you and the students during the research study will be held in confidence and unless you specifically indicate consent, your name will not appear in any report or publication of the research. The findings of this research may be presented at conferences on early learning and in peer-reviewed journals. In addition, the data in aggregate and de-identified format, may be used [redacted] for quality assurance purposes, or in conference presentations/posters. Confidentiality will be provided to the fullest extent possible by law. The data will be collected both by handwritten field notes and by audio/video camera and will be safely stored in a locked filing cabinet in my home office. Only the project investigator and supervisor listed on this application will have access to this information. In line with the requirements of the Research Ethics Board, the handwritten notes and a flash drive with the audio/video data will be securely stored in the Faculty of Education for a minimum of 5 years once the project is complete. Attached to this letter is a consent form and by signing it you have given consent to take part in the research and to be audio/video recorded for data collection and analysis purposes.

The research project has been approved by the Lakehead University Research Ethics Board which conforms to the standards of the Canadian Tri-Council Research Ethics guidelines, and the [redacted] supports this research study. Should you have any questions or concerns, please feel to contact me via email at [redacted] or Dr. Mastrangelo at [redacted]. If you have any questions related to the ethics of this research project and would like to speak to someone outside the research team, please contact Sue Wright at the Research Ethics Board at [redacted] or [redacted] or [redacted]

A report of my findings will be shared with [redacted] at the end of the study and copies can be made available to you as well. If you are interested in receiving an electronic summary of the research results at the completion of the research study, please send an email to Ms. Kelsey Robson [redacted] with your request.
Please do not hesitate to contact us if you have any concerns.
Sincerely,

Kelsey Robson- [redacted]
Cc: Dr. Sonia Mastrangelo- [redacted]
LU Research Ethics Board- [redacted]

**Educator Consent Letter**

May 2021
Dear Educator:
By signing this consent form, you are acknowledging that you have read and understood the information on the previous letter about the research study and agree to my request of pursuing my research in your classroom. You acknowledge and understand the potential risks and benefits of the study and are aware that your participation is voluntary and that you are under no obligation to participate and can withdraw from the study at any time. Upon your request, the findings of the study will be made available to you electronically. Please note that you will remain anonymous in any publication/public presentation of the research findings unless you

explicitly agree to have your identity revealed. After signing this form, you can scan/take a picture and send it to the following email address: [redacted].
Thank you and please don't hesitate to contact us if you have any concerns.

Ms Kelsey Robson[redacted]

Dr. Sonia Mastrangelo- [redacted]
LU Research Ethics Board- [redacted]

Name

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Signature

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Date

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# Appendix D

## Educator Interview Questions

Below is an outline of the questions that the educators will be asked during the educator interview. The questions were developed in consultation with the Teacher Survey developed by Rivkin (2014). The questions will be emailed to the educators in advance of the interview to avoid any confusion and to allow for reflection:

- What does a typical day in your classroom look like?
- Can you describe your pedagogy? How do you believe learning happens?
- What is your image of the child?
- What is the role of the educator? The parent/guardian?
- What is the purpose of education?
- Have you had any professional development (workshops, book study, Reggio Tours, conferences, webinars, etc.) on the Reggio Emilia approach?
- What does the theory of the hundred languages of children mean to you?
- How would you describe your classroom environment?
- Please describe the materials that the children in your classroom have access to?
- How do you decide upon which materials are brought into the room?
- What areas of the classroom are most popular among the children? Why do you think this is?
- How do children develop theories in your classroom?
- How do they test theories in your classroom? How do they confirm theories?

## Appendix E

Hello Educators and Toddlers ☺

As a way to thank you for your support in this research study I have put together a floorbook package for you to complete together as a class. This floorbook and the materials provided are for you to explore on your own and in which ever way you enjoy them. The end product is for your classroom to keep and cherish and will not be used in the data collection or summary of the study, this book is for you! *** *Please note that the pictures provided are not apart of the raw data collected for the study.* Please feel free to add pictures or documentation you may have collected as a class to support your floorbook exploration.

I have included some information on floorbooks and ways to use this type of documentation in the classroom below if you are interested or if this type of documentation is new to you:

**Book Making:** A floor book is a large book that can be placed on the floor for children to flip through and is a form of pedagogical documentation that can be created alongside the children. It is used because it allows for the educators and children to review and reflect on prior learning together in an easy to use format. In her research, Clark (2017) describes that photography offers a powerful language for children. Clark (2017) describes the book making process as a part of the Mosaic approach to listening to young children and supports the process as a platform for further reflection with the children.

**Ways to Engage in the Process:** After laying some of the photographs/documentation at child level, invite the children to come up and observe them and see which ones they are drawn to, you can prompt some responses by asking open-ended questions such as: “Can you tell me about this photo?”, “What do you see in this photo?”, “Why are you using _____ in this photo?”. You can then record the child’s verbatim response, facial expressions, and gestures (what ever is most

developmentally appropriate) directly under their photograph. You can also include your own description or observations alongside theirs. Harper (2002) explains that the visual component of the brain is evolutionary and older than the verbal component and thus evokes a deeper kind of information to surface.

Wishing you all a wonderful end to the summer, if you have any questions, or simply want to share some of your floorbook explorations please feel free to email me at karobson@lakeheadu.ca. It was such a pleasure to be a small part of your classroom this summer.

Kind Regards,

Kelsey, RECE