# DOCUMENTATION OF INQUIRY-BASED LEARNING: FOSTERING A SENSE OF WONDER, CURIOUSITY AND IMAGINATION IN THE PRIMARY YEARS

by

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#### ABSTRACT

The popularity of the Reggio Emilia approach of teaching and learning has increased in early childhood classrooms throughout British Columbia in recent years (Early Learning Framework, 2006). While many early childhood educators have embraced the Reggio approach to documentation of inquiry-based learning, it does not appear to be practiced by the majority of primary educators within my district. This project will investigate how pedagogical documentation of inquiry-based learning has the ability to foster a sense of wonder, spontaneity and imagination in the primary classroom (Kocher, 2009; Malaguzzi, 1998; Rinaldi 2006). More specifically, it identifies certain aspects of documenting inquiry-based investigations that help children gain insight into their own learning through the development of collaboration skills, perseverance, critical thinking and problem-solving strategies (Katz & Chard, 2000). This project also explores how documentation has the power to open up communication with parents, families, administrators and teachers, thus creating stronger community relationships (Malaguzzi, 1993; Vecchi, 2009). Practical examples of inquiry-based learning projects are explored through the creation and implementation of a classroom blog. Through the process of documentation, the history of children's learning is acknowledged, valued and invites further conversations. Consequently, public space is opened for educators to address the importance of children being intrinsically attached to their own investigations, and as a result, are better able to meet their individual potential at each stage of development.

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## Dedication

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#### **CHAPTER ONE: INTRODUCTION**

Trust in children to take you into interesting places.

(Kocher, 2010)

In this Capstone project I explore the benefits and constraints of implementing documentation of inquiry-based learning within the primary classroom. Inquiry based refers to a socially constructed view of children's creative thinking in the exploration of big ideas or concepts where the teacher is a guide and not the expert (Hill, Stremmel, & Fu, 2005). Inquirybased learning requires risk taking on the part of the teacher, as the teacher must believe children are capable and has some control over their own learning. I also seek to examine how pedagogical documentation of inquiry-based learning has the ability to foster a sense of wonder, spontaneity and imagination in learning. In Chapter One of this Capstone Project, I outline the context and background that brought me this project, including why it is important to my practice. I define the Reggio Emilia approach and introduce the theories that inform my Capstone project. In addition, I introduce my guiding questions that are addressed throughout this project.

## **Background and Context**

Over the past few years, I have been interested in learning how to formally document children's learning more effectively in order to help parents see and understand the deep and profound ways Kindergarten children interact with their environment, and with each other. What I began to notice through documentation and reflective process is that I was not paying full attention to the children's interests moving in different pathways because I was more focused on a specific end goal. These specific goals were tied to the Prescribed Learning Outcomes (PLO's), by grade level, set out by the British Columbia's Ministry of Education (2013), and that teachers are mandated to follow over the course of the year and choose them accordingly in each reporting term. Feeling somewhat confined by the government mandated curriculum, and the expectations of my administrator and colleagues, I found myself becoming progressively concerned about meeting these goals each term rather than allowing for more open-ended inquiry and exploration.

This contrasted with the way I had been trained to think as I entered the field of early childhood education, following my training at the Northern Lights College through distance education after many years of being a stay at home mother. I became accustomed to allowing the children's interests to lead the way for what we would investigate together while teaching preschool. The children themselves would decide upon either individually, in small groups or occasionally, as a larger group in what they were interested in discovering. This way of teaching was open-ended, free flowing, and more natural than what I initially experienced in the elementary setting, later on during my teaching career. Working as a Kindergarten teacher in an Elementary school teacher, I began mourning my preschool teaching days when I realized I had more freedom as an early childhood educator, and my students had more autonomy.

After a few years of teaching Kindergarten, I decided to move schools, and I am presently teaching a combined grade two and three class. Even though I had to give up teaching Kindergarten in order to relocate, I wanted to work in a school that matched my beliefs in documenting inquiry-based learning and that in turn promoted children's inquisitive nature and a sense of wonder in the world around them, a motivation that matches the intent of the British Columbia Early Learning Framework (2008) as further described in Chapter Two.

#### **Rationale and Importance of Project**

At the present time, I continue to observe a spark in the children that I have taught for nearly two years, who plead to do more inquiry-based projects. Therefore, through this Capstone project, I found the opportunity to explore practical aspects that could make documentation of inquiry-based learning more manageable within the primary classroom. Since pursuing a career in early childhood education, I have embraced the Reggio Emilia approach that is considered the "pedagogy of listening" (Dahlberg and Moss, 2005, p. 97). This approach informs my practice with young children and it is primarily based on relationships, as described further ahead in this chapter. Therefore, the meaning of this project is grounded in my personal educational philosophy that encompasses community, fostering understanding, honour, and respect within all areas of the child, teacher, and parent relationship through pedagogical understanding and genuine care.

Interestingly, the current Education in British Columbia is being revised, more specifically in terms of the PLOs', and soon to be re-named the "BC Education Plan" (Ministry of Education, 2011). When this new plan is finally implemented, it is expected that teachers will have less constraints and more freedom to concentrate on spending more time on long-term projects that consider children's personal investments. In this way, children will have the opportunity move more deeply into their learning rather than just skimming the surface as is the present situation with quick-paced mandated units of curriculum each term.

This Capstone project is important because it allows me to further explore pedagogical documentation of inquiry based learning while embracing Reggio Emilia principles that honour children as capable and autonomous learners in the primary classroom. My experience from

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teaching preschool and Kindergarten validate the need to return to my original philosophy of believing that children in primary grades naturally seek out what their interests are. They also possess the ability to be spontaneous and, at the same time, they wonder and imagine many possibilities while learning new concepts and ideas.

## **Defining the Reggio Emilia Approach**

The Reggio Emilia approach produces for adults, but above all for the children, a feeling of belonging in a world that is alive, welcoming and authentic.

## Loris Malaguzzi (1993)

In recent years, the term pedagogical documentation has spread among early learning teachers as a way to reflect on their practice, assess for learning, and to share children's experiences with parents and families. Pedagogical documentation is rooted in the Reggio Emilia approach. The history of this particular approach was born out of a need to have a preschool in *Villa Cella*, a small community in Reggio Emilia (Emilia-Romagna region) in northern Italy at the end of World War II.

Loris Malaguzzi, (1998) was the philosophical leader and teacher of Reggio Emilia (Reggio); however it was the parents, and particularly the mothers' of young children in the Reggio community that decided they wanted a quality preschool for their children so they could continue to work. Using and selling materials left from World War II, they began building their school in the middle of the town with the support of their community (Malaguzzi, 1998). Malaguzzi wisely stated, "history can be changed by taking charge of it," and further elaborated "valuable history confirms that a new educational experience can emerge from the least expected circumstance" (p. 57). Indeed, this is what the parents in Reggio began to do after the war left [considerable] devastation on the city and its people

Women played a central role in the development of the Reggio schools. Vea Vecchi (2010) was an atelierista, that is, an early childhood educator with educational background in art. Vecchi (2010) worked at one of the Reggio school's for over thirty years, describes the strong, intelligent women who are credited with processing empathy, solidarity, care, tenderness, and ultimately, to the richness of the Reggio approach to education. At the same time, Malaguzzi (1998) was forthright when he admitted that in the beginning "many eyes, not all friendly, were watching us. We had to make as few errors as possible; we had to find our cultural identity quickly, making ourselves known, and win trust and respect" (p. 52). Malaguzzi and his female pedagogistas (teachers) can be credited with their innovative approach of winning public support at the beginning by taking the children and classroom to the public square. Over time, Reggio Emilia preschools developed more fully, and gained their full respect in Italy. The philosophy spread, especially after the 1960's and eventually found its way to North America (Fraser, 2012; Malaguzzi, 1998). Malaguzzi (1993) was deeply respected by many educators because he firmly believed that children are strong and capable of learning, with unique rights, and therefore, should be given the responsibility for constructing their own experiences with the help of others. The belief that the child is the protagonist and the teacher is the researcher was also at the heart of Malaguzzi's educational philosophy. Malaguzzi further argued that children should be encouraged to work cooperatively with their peers and teachers to promote interdependence, meaning making, and curiosity. This is accomplished in the context of a supportive school culture that is rooted in community, thus encouraging a curriculum that is both internal and flexible.

Malaguzzi is also acknowledged for pursuing "a pedagogy of poetic languages" (Vecchi, 2010, p. 48). He coined the "bicycle metaphor" that beautifully described how theory and practice work together. The bicycle metaphor represents the need for both pedals for good balance. Hence, Malaguzzi (1998) stated, we need both theory (one pedal) and practice (the other pedal) to get very far; otherwise, he cautioned, we take the risk of not moving forward. Vecchi (2010) likens the infusion of theory and practice to that of a marriage in the Reggio approach that is known for its values and is constantly checked and re-examined. Since both theory and practice are required for best practice, I introduce the theorists that inform my project next.

#### **Theoretical Framework**

The theoretical framework that informs my Capstone project is rooted in social constructivism. Constructivism, based on theory building, and fused with the construction of knowledge, inspired the work of Reggio Emilia schools where children's creative thinking and exploration in big ideas are encouraged (Rinaldi, 2006). Social constructivism is defined in terms of how children's creative thinking helps to create theories and build new knowledge in conjunction with the social and physical environment (Piaget, 1954). This way, constructivism allows children to create their own theory of learning through creative thinking and exploration. It is the belief that the child is the *protagonist*, and therefore, is strong, skilled, and capable to construct his or her own meaning with the support of teachers and significant adults (Edwards, Gandini & Forman, 1998). Within the constructivist epistemology, I consider the following four theoretical perspectives to support my topic and inform my practice in my role as an early childhood educator and primary teacher: Social constructivism, sociocultural theory, social learning theory, and ecological systems theory, described next. I also introduce the documents

entitled Early Learning Framework (2008) and the Primary Program (2000) that promote the Reggio Emilia approach to learning, including the use of documentation in the learning process.

#### Constructivism

Jean Piaget (1896-1980) is known for his genetic epistemological theory of "four chronological stages of reasoning development," (Pass, p.111). Piaget (1950) posed that the individual child was an active participant in the acquisition of his or her knowledge. In Piaget's words, thinking was at the center of child development, where logic and conceptual growth occurs.

Piaget's epistemological theory of development argues that children create new knowledge and form meaning based on their experiences. Piaget is recognized for "redirect[ing] the way we think about knowledge" (Waite-Stupiansky, 1997, p. 2) from memorizing mere facts to internalizing information "and then creating a construct from this internalization" (Pass, 2004). The sequence of stages through which Piaget believed children advanced begins with the sensorimotor intelligence period, and opened that space between birth and approximately to two years. During this time of development, infants pass through six key stages, described in the section that follows, and that include sub-stages using their senses to adapt, and learn about the world around them (Flavell, 1963.)

The pre-operational stage (approximately ages 2 to 7 years) is considered the period when children are egocentric, and thus are more concerned about the actions, rather than the intentions of others. In other words, they fail to see another's point of view. This is not because they are self-centered; on the contrary, during simple games, as Piaget argued (1932) "the young child plays for himself" (p. 31) and is more concerned about his or her own skill than the

rules for the game; moreover, young children acquire knowledge of self versus- others, and very little cooperation exists during this stage of development. As Piaget (1932) pointed out, "while he believes himself to be sharing the point of view with the world at large, he [the child] is still really shut up with his own point of view (p. 26).

The next stage of Piaget's (1932) theory is the concrete operational stage, (approximately ages 7-14 years). During this stage, children begin to become more social with their peers, who "desire mutual understanding in the sphere of play" (Piaget, pp. 32-33) while learning shared rules amongst each other where everyone begins to agree upon these rules. Children at this stage also begin to think in a logical way. Using conservation tasks, the child realizes the attribute remains, for example, amount of liquid in a container, the same even if the shape of the container changes (Flavell, 1966). Thus, as Piaget (1950) explained, this can be observable in a child that is not able to use the conservation property yet if they believe the quantity or the amount changed, when in fact only the form was manipulated.

Finally, during the formal operational stage (approximately ages12-14 years and through adulthood) young adolescents are better able to manipulate ideas, classify and sort items in their mind and use logical, abstract thought, and reasoning (Flavell, 1963; Piaget, 1950). The young adolescent also begins to observe relationships between things and make connections. As Piaget (1950) asserted, "the adolescent, unlike the child, is an individual who thinks beyond the present and forms theories about everything, delighting especially in considerations of that which is not" (p. 148). It should be noted that logical thinking develops over time and well into adulthood. In adulthood, abstract thought, reasoning, and meaning occur as the adult constructs new knowledge, skills, and ideas (Piaget, 1950; Waite-Stupiansky, 1997).

#### **Sociocultural Theory**

Russian psychologist Lev Vygotsky work expanded on Piaget's epistemological theory through his inclusion of the social aspect of learning. Vygotsky (1978) argued that children construct knowledge from the aid of competent adults and peers. Vygotsky (1986) coined the term "zone of proximal development" or ZPD as "the discrepancy between the child's actual mental age and the level he reaches in solving problems with assistance" (p.187). Vygotsky warned that when educators only teach to "the child's weakness rather than his strength" (p. 189) they ultimately fail to bring him or her into the ZPD where scaffolding to a higher level of mental development. Vygotsky's social cultural theory will be further elaborated in Chapter Two.

The tenements of sociocultural theory are relevant for educators in Reggio Emilia who placed value and importance on relationships before Vygotsky's theories were well known in the rest of the world (Fraser, 2012). For example, Pass (2004) argued that while Piaget and Vygotsky disagreed on certain aspects of their theories, one cannot discount their own personal socio-cultural histories that contributed to what they believed and why. This is a really an important point in that our socio-cultural experiences do shape what we believe and how we view the world. It is also a point that cognitive psychologist Jerome Bruner (1915-) further examined children's cognitive development by examining how children learn how *to learn* by drawing on Vygotsky's sociocultural theory, as described next.

Bruner (1966) is recognized for his theory of instruction, where he uses the term, "scaffolding," to illustrate how the teacher provides activities that lead the child to the next level of learning. Bruner defined scaffolding in terms of taking new knowledge and adding it to what is already mastered through meaningful experiences. Bruner sought to learn more fully "how people reach their high water mark" (p. 4) through his experiences with education. Bruner asserted that curriculum moves in an upward spiral motion as the educator provides experiences that are reconsidered at each higher level of complexity. Bruner was also intrigued with the motivation for learning, and contented that curiosity is an intrinsic motive in learning, as well as the desire to reach competence.

The theory introduced in the next section takes into consideration children's relevant experiences that are believed to contribute to the construction of knowledge, problem solving and critical thinking skills that educators wish to encourage in their students. As an educator, I also wonder about this topic, and I am therefore led to the works of John Dewey.

#### **Social Learning Theory**

American philosopher, educator and psychologist, John Dewey (1859-1952) believed that if the aim of education was to be truly successful, the student must be deeply and fully engaged. Dewey (1944) stated, "To be interested is to be absorbed in, wrapped up in, carried away by, some object" (p. 126). In other words, Dewey advocated that children should care about what they are learning. Dewey attributed this engagement with an underlying "personal attitude" (p. 126) towards learning that successful students displayed. Dewey revealed that interest is sustained when a student is encouraged to explore "consistently and continuously" (p. 127) and he or she interacts with others through experiences that are engaging and meaningful.

Dewey (1938) could see the value in problem solving with others' during long-term projects and felt that this was more important than the "intended lesson" (p. 49). Dewey argued, "unless a given experience leads out into a field previously unfamiliar no problems arise, while problems are the stimulus to thinking" (p. 96). Hence, Dewey firmly believed it was through difficulty that ultimate growth occurs in the child. This way of learning is different from traditional education. This is because the child seeks to find the answers through problem solving with his or her peers rather than the teacher transmitting mere facts to the child. In fact, Dewey's quote "from a social standpoint, dependence denoted power rather than weakness; it involves interdependence" (p. 44) is a relevant thought and it is also an interesting aspect to ponder for the purposes of this project. More specifically, it refers to the collaboration between students during inquiry-based learning that is encouraged.

According to Glassman and Whaley (2000), Dewey was a pioneer in encouraging "process-based education" (p. 1). Dewey (1916) believed education should be a continued process over teacher directed, goal-based activities with specific content in mind. However, his philosophy goes much deeper than only promoting aim-based education. It is remarkable to read Dewey's work and realize that what he was advocating for then, educators continue to read and reflect on today, decades later, as further described in Chapter Two. Furthermore, Dewey argued that learning is from a social perspective, psychologist Urie Bronfenbrenner's ecological systems theory encompassed the whole environment in the development of the child, introduced next.

## **Ecological Systems' Theory**

Urie Bronfenbrenner (1917-2005) argued that in order for us to understand human development, one must consider the entire ecological system in which growth occurs Bronfrenbrenner, 1979). Ecological theory focuses on environmental influences that have impact on the developmental changes of a child. Furthermore, ecological theory considers the interconnections between the child and his or her immediate environment; primary relationships and experiences is what Bronfenbrenner termed the micro and mesosystems. According to Bronfenbrenner (1986), religion, economics, education, politics, and government systems are a part of the individual's exosystem, while individual cultures and family beliefs are found in the macrosystem. Finally, the intergenerational links from one generation to another is found in the chronosystems, thus showing the dimension of interconnection of sociohistorical significance in a child's life.

Bronfenbrenner (1986) clearly points out that the mesosystem is a combination of microsystems, which are "formed or extended whenever the developing person moves into a new setting. This is why authors including Hill et al. (2002) point at the value placed on relationships in the micro and mesosystems with peers, teachers, administrators, parents, families and the greater community, and how these contribute to important "places where children are known, understood, and valued" (p. 47).

Moreover, Bronfenbrenner (1979) explains that while the exosystem-including neighbors, social welfare services, media, neighbors, friends and extended family, the local school board and the parent workplace- does not directly influence the developing child, the child can be indirectly affected through particular circumstances in the exosystem. While the macrosystem is the amalgamation of the micro, meso, and exosystem, the individual's nationality, cultural identity, beliefs, and ecology make the macrosystem distinct to that particular child. I further elaborate on Bronfenbrenner's ecological theory in Chapter Two. I describe BC Early Learning Framework in the next section.

## The British Columbia Early Learning Framework

One of the purposes of the British Columbia Early Learning Framework (2008) was to open up dialogue among educators, parents and caregivers to "develop a common language and greater understanding of the vital importance of early learning for all young children" (p. 3). However, the main purpose in the creation of this framework was to ensure a paramount learning environment for all children and to support educators in the process of creating a fertile atmosphere in their classrooms. This document is important because it supports documentation of inquiry based learning not only in the early years, but also in the primary grades. This, in turn, is relevant to this Capstone project because it clearly illustrates the focus that educators need to strive for and provides the foundation to build good practice, as further described in Chapter Two.

## Purpose, Significance, and Guiding Questions

The purpose of this project is to identify certain aspects of documenting inquiry-based projects that help children gain insight into their own learning through the development of perseverance, critical thinking skills, and problem-solving strategies. This project also explores how documentation has the power to open up communication with parents, families, administrators and teachers, thus creating stronger community relationships and giving a public space where the history of children's work is acknowledge and valued, encouraging further dialogue and possibilities. Through specific learning environments and community support, advocates for the Reggio approach continue to believe in enhancing "the image of the child" (Early Learning Framework, 2008, p. 4). The principles of the EL Framework also reveal the importance of making children's learning visible through documentation and then critically reflecting on educators' observations to enhance professional practice and promote exploration and creativity. This framework is important because it encourages the Reggio Emilia approach to learning in the primary years. Vecchi (2010) reminded educators of the need to define knowledge "in deeper ways and with greater awareness," (p. 17) and, at the same time, to promote engagement while enhancing "cultural vivacity" (p. 17) in the learning process.

This project is significant in that it has the potential to impact how educators view their practice of teaching. In my experience, the majority of educators I have observed teach from the perspective that they are responsible for transmitting knowledge to children, rather than having children being active seekers in their own knowledge. A question always sets new thoughts in motion in order to ask ourselves why we do what we do as educators. I therefore wonder whether or not the way we teach presently benefit the child in reaching his or her full potential, and how does the educator feel about the present way the curriculum is taught. I also challenge whether there is "breadth over depth of knowledge" (Egan, 2010, p. 7) that inhibits wonder, curiosity, and imagination, as expressed in the guiding questions that follow.

# **Guiding Questions**

The following questions guide this project:

- How can documentation of inquiry based learning reveal a sense of wonder, creativity, and imagination in learning for primary (K to grade 3) educators?
- 2) In what ways can documenting inquiry-based learning facilitate collaboration between children, teachers, parents and colleagues?
- 3) What are ways that web-based resources, and namely, blogs, can capture documentation of inquiry based learning within the classroom?

## **Organization of the Project**

In Chapter Two, I expand on the theoretical framework and then I proceed to review the literature relevant to documentation and inquiry-based learning in the primary classroom. In Chapter Three I connect the knowledge gained through my literature review in exploring and implementing documentation of inquiry based learning. I introduce a blog to be linked through the Burnaby School District website that I created and developed in my classroom for the purpose of sharing learning with parents. In Chapter Four, I reflect on my personal journey throughout this project and provide conclusions, practical applications for the primary classroom. I also outline the limitations of this project and provide recommendations for future research.

#### **CHAPTER 2: REVIEW OF THE LITERATURE**

This chapter expands on the theoretical framework guiding this project, and provides the reader with insight into the topic of pedagogical documentation of inquiry-based learning in the primary years through a review of the extant literature.

## **Theoretical Framework**

I hear, I forget. I see, I remember. I do, I understand.

Constructivist teachers teach for understanding

(Waite-Stupiansky, p. 26)

As introduced in Chapter One, I am drawing primarily on the constructivist perspective to inform my topic represented through Jean Piaget, Lev Vygotsky, Jerome Bruner, John Dewey, and Urie Bronfenbrenner's theories. In addition, draw upon and establish connections with the Reggio approach and the British Columbia Early Learning Framework.

## Constructivism

I begin with constructivism, the theoretical framework that supports pedagogical documentation and inquiry work, that is at the heart of the Reggio approach, since "constructivism views the learner as an active participant in the learning process" (Waite-Stupiansky, p. 24). In *Parallel Paths to Constructivism* (2004) author Susan Pass argued the way lessons have been taught, and continue to be taught in classrooms presently can be traced back to the constructivist and social constructivist theoretical underpinnings of world-renowned psychologists Jean Piaget and Lev Vygotsky, as introduced in Chapter One.

**Piaget's epistemological theory.** In terms of his epistemological theory, Piaget (1950) can be credited for provoking new ways of critical thinking skills in children as they interact with their environment and assimilate new information, then, they accommodate it with previous knowledge, thus reaching what Piaget coined as "stable equilibrium" (p. 7). These building blocks of organizing knowledge are what Piaget referred to as "schemata" (p. 85). However, it should also be noted that various schemas are also observed in other stages of Piaget's cognitive developmental theory, and that they play a vital role in development in terms of assimilation and accommodation. As one assimilates new information, Piaget posits, he or she then makes accommodation for that new information that is considered the "most fundamental ingredient of intellectual functioning" (Flavell, 1963, p. 58).

It is important to keep in mind that with each cognitive internal and external control of new schemas, a state of a constant state of assimilation and equilibrium is maintained. This is followed by the accommodation process of a new situation, referred to as disequilibrium, and, finally, by another level of assimilation and equilibrium (Piaget, 1950). Therefore, the construction of intelligence is when a child builds reality, based on their previous perceptions and experiences with personal experiences as a point of connection. According to Piaget (1950), the most highly developed intersection is when children are able to adapt their mental functioning with each experience as they progress through each maturation level of development. Nevertheless, in commenting about Piaget's earlier work, Pass (2004) revealed that Piaget later on admitted that some adults do not reach Formal Operations, the final developmental stage of his epistemological theory, introduced in Chapter One. Piaget's (1950) theory is based on the premise that the mind models the external world, and therefore, human beings make sense of their world by means of mental structures. This "structuring of the relations between the environment and the organism" (p. 5) is the essence of what Piaget believed how humans learn.

What can be appreciated about Piaget's theory of social constructivism was his passion for how children develop, together with his willingness to listen to them, and his pull towards understanding to their mistakes. He was known "papa-experimenter" (Labinowicz, 1980, p. 20) because of his patience and relationship with children. At the same time, Piaget viewed children as co-constructors of knowledge primarily on their own, Vygotsky, also a constructivist, theorized that children co-constructed knowledge with the help of diverse others who in turn help them reach the next level of development (Fraser, 2012; Hill et al., 2002). The next section elaborated on the Vygotsky's sociocultural theory, and that expanded from the Piagetian theory.

**Sociocultural theory.** Vygotsky (1978) argued that children not only learn from significant peers and teachers in a larger social setting, they also develop from more intimate conversations with others. An important aspect in Vygotsky's theory that differed to Piaget's constructivist views consisted on the addition of the sociocultural aspect; that is, development cannot be separated from a child's social and cultural context (Wertsch, 1985). This confirms Vygotsky's belief that culture plays a central role in a child's development, and also exposes Piaget's initial theory that children primarily learn on their own and in isolation. Moreover, Vygotsky argued, social interaction leads cognitive development with the assistance of a more knowledgeable other playing a key role in a child's development

Vygotsky (1978) further asserted that language is firmly linked to "internal mental functions" (p. 89) that in turn lead to higher level thought processes during communication with others' in their social environment. Vygotsky believed that as a child entered the ZPD he or she internalized learning with the help of a nurturing social environment and caring adults (Glassman & Whaley, 2004; Pass, 2004). It is fascinating to see Vygotsky's theory enacted with children entering the ZPD, as Vygotsky also placed importance and value on relationships between children, parents and teachers. According to Fraser (2012), Vygotsky viewed these relationships crucial, and felt they contributed to the child's "growth and development" (p. 82). Vygotsky further argued that, "all the higher functions originate as relations between human individuals" (p. 57) referring to his belief that social relationships are key in the learning process.

As previously introduced in Chapter One, Jerome Bruner, known for his theory of cognition, expanded on both Piaget's and Vygotsky's theories. Bruner argued that children construct new ideas based on what they already know in the process of scaffolding new knowledge (Bruner, 2003). Bruner (1966) highly respected Piaget, but felt Piaget's theory required further examination because it did not take into consideration the "individual differences in development" (p. 440) including the individuals educational exposure, socioeconomic background, or degree of intelligence. Furthermore, Bruner also noted that Piaget's theory lacked "the development of cognition through the whole life cycle" (p. 441). However, Piaget was more concerned with the knowledge children process at different stages of their development. Likewise, Bruner (1966) was deeply intrigued with what children know during their development and how they acquire new knowledge. Intrigued with the motivation for learning, Bruner referred to curiosity as an intrinsic motive in learning as well as the desire to reach competence.

In relation to Vygotsky, Bruner (1998) posed an important question, "What kind of space helps human beings grow?"(p. 137). This question is also relevant to educators in Reggio because the environment is considered "third teacher" (Rinaldi, 2006). At the same time, early childhood expert Cathy Nutbrown (2001) poignantly asked "What kind of adults does the world need and how do we best nurture them as children?" (p.118). These examples refer to how the intersection of the space (e.g., a space to be curious, and space to wonder, to explore-build, research) and express ones culture. Indeed, human interaction was of utmost importance for Vygotsky's and Bruner's theories of child development.

In terms of the Reggio approach, Bruner (1998) maintained that Reggio preschools are special, "pulsing with the life of the place" where "human beings are invited to grow in mind, sensibility, and in belonging to a broader community" (p. 137). He profoundly influenced the Reggio philosophy in that children learn best when they are keenly interested and attached to what they are learning (Rinaldi, 2001, p. 29).

The understanding that social relationships play a vital role in children's development, is the tenement that John Dewey (1916) sustained in his theory of social learning, as described next.

**Dewey's social learning theory.** Similar to Vygotsky's theory of social construction, John Dewey (1916) revealed that children build positive cognitive and social-emotional behaviours as they engage in collaborative activities with their peers. According to Dewey, selfreliance on oneself brings about a self-centered approach that disregards others' in learning process, thus decreasing social interaction. In fact, Dewey made a relevant point when he stated that "from a social standpoint, dependence denotes power rather than weakness; it involves interdependence" (p. 44). This is an interesting aspect to ponder, for the purposes of this project, and especially with regards to the collaboration between students during inquiry-based learning that is encouraged. Dewey (1916) believed that with each experience, children learn "the power to develop dispositions" (p. 44) that ultimately build habits and power needed to face the next problem or experience. This is how complex problem solving and critical thinking skills are best developed, through relevant experiences with others' that build on the previous experience and actions adapted as a result. Dewey (1916) further argued that habits will not be made stronger with a lack of significant experiences. Therefore, when children are given the opportunity to find answers to deep questions over time, habits can be built and dispositions to persevere and work hard are encouraged and fostered.

Dewey (1938) contended that it is the duty of the educator to examine which experiences are worthwhile to explore, first whereby the educator (or adult) examines their own prior experiences, and then the prior experiences of their students. This is where it is important for educators to take the time to know their students well and take time to build a caring, inclusive classroom. After some reflection, the educator is responsible to then gauge which environments are advantageous to optimal learning and growth.

In reference to this aspect of Dewey's theory, Glassman and Whaley (2000) argued that children are also capable of deciding which areas or ideas they would like to explore, with adult guidance and support. Constructivism is firmly rooted in critical thinking whereby the educator facilitates student investigations and solutions, and thus enters into a shared relationship as they discover new experiences together (Pass, 2004; Dewey, 1938). From looking at the theoretical and philosophical underpinnings of documenting inquiry-based experiences over time, it is clear that there are treasures to be gleaned from such practices within the classroom. Urie Bronfrenbrenner, previously introduced in Chapter One, is well known for his ecological systems

theory in human development as it relates to the environment in which the child lives, grows and interacts with others, as described in the section that follows.

Bronfenbrenner's (1979) theory takes into consideration the complex web individuals weave as they form deep relationships and interactions with many different people in many different contexts throughout life. From Bronfenbrenner's point of view, in order for the child to reach his or her potential, the help of many others id required, as observed in his ecological systems model. Bronfenbrenner sustained it is not only the child who develops, but it is also the significant adult in that child's life that he referred to as the "dyad, or two-person system" (p. 5) who changes and grows with the child. This includes parents, grandparents, teachers and primary caregivers in the child's sphere of influence. It should be noted that a child's perception of environmental influences around him or her might not always be so obvious to adults. Bronfennbrenner (1976, 1979) stated "that the scientifically relevant features of any environment include not only its objective properties, but also the way in which these properties are perceived by the persons in that environment" (p. 22). Interestingly, Brofenbrenner's (1979) posits concur with Piaget's tenement that each child creates an imaginative world of its own filled with fantasy. This, in turn, reflects each stage of their development as he or she matures and begins to observe reality within each respective system in the environment.

Brofenbrenner (1976, 1979) raised a relevant point about how ecological transitions happen whenever a major change occurs in a person, place or within both. For example, the birth of a sibling, starting school, a divorce, a move or a parent losing his or her job constitutes ecological transitions that are "both a consequence and an instigator of the developmental process" (p. 27) and adjustments must be made accordingly. The following figure illustrates Bronfenbrenner's theory of ecological systems, described in Chapter One, that specifically interact and influence a child's development throughout one's lifetime.



*Figure 1.* Bronfenbrenner's Ecological Systems Theory. Bronfrenbrenner described development as never taking place in isolation but rather it is always rooted and articulated through particular behaviors and environmental circumstances

(source:<u>www.impactofspecialneeds.weebly.com</u> in Daitz, 2012.)

In the next section, I discuss research that informs the reader of the foundation of the topic of this Capstone Project: The Reggio approach to learning, and its philosophy regarding interrelationships with others.

# **Reggio's Present Day Approach**

In addition to Bronfenbrenner's ecological systems theory, Piaget, Vygotsky, Bruner, and Dewey can all be credited with laying the groundwork for an education that is active through experiences including student-led questioning, critical thinking, and problem solving (Malaguzzi, 1998: Waite-Stupiansky, 1997). In an in-depth interview with Gandini, Malaguzzi (1998) reminded the reader that the relationships to which he referred in Reggio are not only safe and caring, but also a forceful intersection towards a mutual objective (p. 68). According to Hill et al. (2002) "Social relationships are basic to the learning process and to the construction of meaning" (p. 47) and the Reggio approach firmly supports viewing the child as "fully human and worthy of respect" (p. 47). Moreover, an education that acknowledges children's place in society, and that is based on relationships with others is always at the forefront of Reggio teaching philosophy that draws from Bronfenbrenner's ecological theory of development (Malaguzzi, 1993).

In revisiting Vygotsky's (1978) theory of social constructivism and establishing parallels to the Reggio approach, Moss (1991) argued that relationships and listening is fundamental when children co-construct learning together. Moss further stated that in order for children to make meaning they need to actively listen and communicate with each other. In addition, Malaguzzi (1998) attributed Vygotsky with reminding educators just how intertwined thought and language are when children take their ideas, discuss them, and then negotiate and formulate logical plans together. Malaguzzi described this as "a precious insight for education" (p. 83). Similarly, Dahlberg, Moss, and Pence (2007) have done extensive research on how early childhood is a socially constructed. Dahlberg et al. (2007) argued that childhood must always be observed through "time, place, culture, and varies according to class, gender and other socioeconomic conditions" (p. 49). Dahlberg et al.'s statements reinforced Bronfrenbrenner's theory that children "have a recognized and independent place in society" (p. 49) and therefore, are also a product of the environment in which they live. In other words, each child comes with their own ecological system, as they arrive to school, and this influences how much -- and also the rate at which-- they learn, develop, and grow socially, emotionally, intellectually and spiritually, while

developing a sense of wonder in their world. The Reggio approach has a profound way of placing value on interrelationships between children, parents and the community that is "central to the education of children" (Malaguzzi, 1998, p. 64). In doing so, the tenements from this approach acknowledge Bronfenbrenner's concern about the breakdown in community connections and several factors that exist in the life of a child (Hill et al., 2002).

At the same time, the Reggio approach takes into consideration Bronfenbrenner's requests that our school system bear more responsibility for "the social and moral development of the child" (as cited by Biber, 1994, p. 49) for the benefit of a morally, socially capable society. Finally, the Reggio approach establishes that it is equally important for educators to not only value the child-teacher relationship, but also the relationship with their colleagues, administration, families, and the greater school community. This notion considers Bronfenbrenner's (1979) argument that an ongoing tension exists between the individual and the community that surrounds the child in what he referred to as the mesosystem, comprised of microsystems, and is expanded when the child moves from one microsystem to another.

In their review of the Reggio approach, Clark and Moss (2005) emphasized on the need for adults to focus on "children's lived experiences" (p. 8) to ensure that they are viewed as significant, contributing members of their community, and not just mere consumers of society (Malaguzzi, 1998, p. 73). Bruner (1998) validated that Reggio preschools are special, and "pulsing with the life of the place" where "human beings are invited to grow in mind, sensibility, and in belonging to a broader community" (p. 137). According to Rinaldi (2001), Bruner profoundly influenced the Reggio philosophy in that children learn best when they are keenly interested and attached to what they are learning.

## The Reggio Approach to Learning

In the Reggio approach to learning, a "project" is defined as an in-depth investigation that is on an intriguing issue or subject that is explored by a group, class or individual over a period of time, lasting many days, weeks or even months (Hill et.al, 2002). A project (also termed "project work" or "project approach" can also be adapted for older children in that they take on leadership roles within the project, with different responsibilities for the work that need to be accomplished (Katz & Chard, 1989). Long-term inquiry projects should come from what the children are interested in exploring. The teacher facilitates this by introducing different topics and observes if the children are enthusiastic, or the teacher carefully observes what the children are naturally interested in and builds on these over time (Glassman & Whaley, 2000).

The Reggio approach enhances the process of learning and the image of the child (Scheinfield, Haigh, & Schenfield, 2008) through specific natural environments. The Reggio approach also places a strong emphasis on early learning partnerships. In Reggio schools, community relationships are essential and referred to as "gestione sociale" (translate: "the social issue") (New, 1997, p. 229) where parents, teachers and children agree on a "bill of rights" (p. 229) that is later, shared with the community.

This is where the document entitled "Understanding the British Columbia Early Learning Framework: From Theory to Practice" (2008) –a document that complements "The British Columbia Early Learning Framework" (2008) document introduced in Chapter One-- advocates for Reggio philosophies and concepts with regard to educating young children in the province. The image of the child, with a keen awareness of the individual's cultural identity and immediate environment is the essence of the documents examined in the section that follows.

#### The British Columbia Early Learning Framework for Teaching Documents

The contents of the BC Early Learning Framework (2008) document remind educators that while we aspire to have all children reach their potential, "not all children have the same opportunities to develop their potential" (p. 4), and as a result, we can be inspired to meet the needs of children in order to develop "individual strengths" (p. 4) and to discuss possible conditions that hinder optimal learning and find solutions in the process. The framework also advocates that the child should always be at the forefront, noting a keen awareness of one's cultural identity and environment that plays a vital role in how educators develop an optimal environment for children to grow, learn, and thrive.

The BC Early Learning Framework was created with the aid of four government agencies: the BC Ministries of Health, Children and Family Development, Education and Healthy Living and Sport, along with experts and researchers in the field of early childhood education, parents and Aboriginal organizations. Similar to the Reggio approach, the research probes the question of how early childhood teachers could better "reflect on children's enormous capacity for learning in the early years" (p. 2) through the development of four specific areas, including wellbeing and belonging, exploration and creativity, language and literacy, and social responsibility and diversity.

A related and similarly relevant document, "The British Columbia Primary Program: A Framework for Teaching" (2000) is yet another important document for educators because it reminds teachers about the importance of connecting theory and practice. It outlines the following five areas of development from Kindergarten to Grade Three: 1) Emotional and Social development, 2) Intellectual development, 3) Physical development and Well-Being, 4) Social Responsibility, and 5) Aesthetic and Artistic development, described next: 1) Emotional and Social development promotes a positive self-concept, independence, sharing, cooperating and learning to develop positive relationships. 2) Intellectual development encompasses all curricular areas and encourages critical thinking, problem solving and specific strategies that promote new ways of thinking and learning. 3) Physical development and Well-Being encourage the process of taking care of oneself through regular exercise, healthy eating and learning to play safe and fair with others. 4) Social responsibility teaches children to take ownership of their work, respect school rules and develop positive work habits. Finally, 5) Aesthetic and Artistic development focuses on encouraging an appreciating for the arts, being able to tell a story and use one imagination through art (p. 20).

Both the "BC Early Learning Framework" (2008) and the "BC Primary Program" (2000) documents promote development of the whole child and encourage diversity, skill mastery, and individual learning styles. In addition, both documents advocate that children are capable and full of potential, and therefore, should be given the opportunity to develop their whole being.

#### The Power of Documentation

The Reggio approach and methodology of teaching is also known for its use of documenting formal inquiry-based project group work, often referred to as the "pedagogy of listening" (Dahlberg & Moss, 2005, p. 97; Vecchi, 2010; Katz & Chard, 1998). Dahlberg and Moss (2005) clearly pointed out:

Listening to thought is about being able to hear the ideas and theories of the Other, and to treat them seriously and with respect, neither ignoring them nor dismissing them for not providing the right answer. But what is listening? Listening plays a crucial role in the work of Reggio Emilia. [...] It involves many forms of communication, invoking Malaguzzi's

famous expression 'the hundred languages of children.' And is saturated and mediated by values and emotions. (p. 99)

In addition, Malaguzzi (1998) emphasized how creativity should be "our way of thinking, knowing, and making choices" (p. 75) rather than being a divided intellectual capability. Moreover, documentation of long-term inquiry projects (Katz & Chard, 1998), is one way to reveal children's interests through what they choose to explore more deeply, and perhaps more importantly, why they choose to explore what they do in many creative forms. Notably, in Reggio schools, children are encouraged to speak in many different respects, through their investigations with the environment, and with their peers, teachers and significant adults. The Reggio approach influenced educational researchers at Project Zero. Project Zero (2010) is headed by the Harvard Graduate School of Education since 1966, and conducts independent research projects that help inform educators on the various processes of learning who began looking more closely at its influences in the 1990's.

Giudici, Krechevsky, and Rinaldi (2001), among a host of other scholars and experts in the field conducted in-depth research on the Reggio approach to learning reported in a document entitled "Making Learning Visible." Giudici, Krechevsky, and Rinaldi agreed that it is a combination of specific learning environments with collaboration between educators, students, colleagues, and parents when children are viewed as constructors of their own explorations through a continual process, much like Dewey originally envisioned. This is an important aspect to the Reggio approach to learning because it focuses on the "image of the child as an active discoverer and inventor" (Fraser & Gestwicki, 2002). Fraser & Gestwicki (2002), also considered the environment very important, and considered the third teacher with natural materials used and encouraged.
The Project Zero research team continues to do extensive research about the Reggio approach. Authors Krechevsky, Mardell, Rivard, and Wilson (2013) have just released their latest research entitled, "Visible Learners: Promoting Reggio-Inspired Approaches in All Schools," demonstrating the power of documentation and collaboration during group learning that is being promoted in both elementary and secondary schools. This research is important to this Capstone project because it specifically looks at implementing the Reggio approach for older children and looks closely at the interactions between students, teachers, parents, and the greater community through the process of making older students work visible.

Similarly, research conducted by Kocher (2009) based on her own Kindergarten teaching experience explored how teachers were changed by the influence of pedagogical documentation. In her article, "Setting Our Little Sails: Pedagogical Documentation as a Phenomological Act" (2009) Kocher explained how she came to view pedagogical documentation after attending a Reggio documentation traveling exhibit entitled "The Hundred Languages of Children" (p. 121). Kocher stated, "the image of the child as strong, resourceful, curious and competent was everywhere in the exhibit. Indeed, children's thoughts and feelings were offered in such a respectful way that I came away changed" (p. 122).

Kocher's (2004) assertion about documentation and how it offers a challenge to the research community is encouraging. Kocher invited researchers to look carefully at the stories teachers uncover and to consider the ways in which teacher knowledge articulates a more complete picture of teaching and knowing. Similar to Kocher's work, MacDonald (2007) has completed extensive research in the area of pedagogical documentation. MacDonald stressed how through documentation, children have the opportunity "to communicate ideas, and provoke and inspire responses from others that may lead to further action or self-awareness" (para.1.1).

Through documentation, collaboration and discussions are interwoven to encourage how children, parents and educators make meaning as they learn and grow together. As MacDonald (2007) has reminded the reader, pedagogical documentation can create significant records of teaching and learning that inform the practice of classroom teachers and create visible traces for children and families, adding transparency to classroom lessons and projects.

#### Meaning Making, Inquiry-Project Work and Problem Solving

In the Reggio approach, children are encouraged to be interdependent and create meaning making with their peers (Project Zero, 2010). In addition, emergent curriculum is central to the Reggio approach, where inquiry project work is encouraged (that is, process over product) over long periods of time (Vecchi, 2010). This also appears to be in line with what Dewey had in mind when he proposed his "dynamic aim" in education so long ago (Glassman & Whaley, 2000, p. 1). Moreover, Vygotskian influence is demonstrated in the structured dialogue led by educators" (Anning, Cullen & Fleer, 2009, p. 151), and is significant to the Reggio approach in terms of constructing and deconstructing knowledge.

In addition, Fraser (2012) explained that educators in Reggio placed value and importance on relationships before Vygotsky's theories were well known in the rest of the world. Indeed, it could be argued that leaders in Reggio were more progressive with regard to the education of young children well before other countries placed more value on early childhood education. As earlier mentioned in Chapter Two, "project work" is another facet of Reggio schools, and over time this aspect of education found its way to North America. Katz and Cesarone (2004) however, explained that project work did not really originate with Reggio. Project work can instead be traced back to England, referred to the "Plowden years," (p. 8) and the United States in the 20<sup>th</sup> century. Katz and Cesarone also revealed that Reggio schools can be credited for taking the project approach "further than anyone else," (p.14) and similar to Dewey's ideals, the authors revealed that educators should identify and seek out real problems that are not easy to solve if we are to make improvements in education (p.16). This seems to be a reoccurring fact; that is, in order to have children become problem solvers and critical thinkers, educators need to provide opportunities and environments for this type of thinking to happen (Helm & Katz, 2011).

In another review of this topic, Helm and Katz (2011) argued that in order for children to be prepared for the demands of the 21<sup>st</sup> century, with growing technology and the skills needed to meet these demands, "education reform" (p. 1) is a must. In fact, they continue to press towards the project approach of inquiry based learning because "projects provide experiences that involve students intellectually to a greater degree than experiences that come from teacher-prepared units or themes" (p. 3).

Equally important, and in terms of implementing inquiry-based projects within the classroom, Katz and Chard (1989) outlined the following five specific aims for educators to follow: 1) Intellectual Goals and the Life of the Mind, where educators are seen as facilitators in helping to provide experiences that promote learning through strengthening dispositions of the learner; 2) Balance of Activities, reminds educators that inquiry-project work should not be the only avenue to use in teaching. This is a also a good reminder to educators when considering implementation of inquiry-project approach. 3) School as Life, help children and educators to view inquiry-project work clearing children's minds from distinct subject areas to more organic experiences and explorations. 4) Community Ethos in the Class is another important part of education. It is the ability to build community within the classroom. 5) Teaching as a Challenge, suggests viewing inquiry-project work as a challenge, since, the authors argued, most of teaching

is a challenge and requires a positive attitude to the problems faced in the field. Therefore, educators are seen as facilitators in helping to provide experiences that promote learning through strengthening dispositions of the learner with strategies that promote perseverance and problemsolving skills. The inquiry project-approach encourages "cooperative ethos to flourish" (p. 6) as children work collaboratively together.

#### **Documentation: Practical Applications for the Primary Classroom**

In this section, I highlight literature (Given et al., 2010; Harvey & Daniels, 2009; and Van Manen, 2002), that supports my goal of promoting and capturing a sense of wonder, spontaneity, and imagination in through documentation of inquiry-based learning in my primary classroom.

In *Changing School Culture: Using Documentation to Support Collaborative Inquiry*, Given et al. (2010) reported on the findings of a major qualitative study using grounded theory. The study included three participant teachers, in three different schools, who took on the Reggio approach in their professional development. The purpose was to observe how their joint commitment during and after the documentation process within their respectful classrooms would reveal. The teachers investigated what needed to be addressed during this new process so that fundamental learning and anticipated growth could occur while working collaboratively together with their students and colleagues. Teachers in these groups worked through their own cultural, pedagogical experiences, including the stress of group collaboration. Findings from Given et al.'s study revealed that participants' teaching practices improved through the process of learning to work, collaboratively as a group through mutual communication and problem solving. Each group found that their ability to observe, interpret, analyze, and discuss data was strengthened using the Reggio approach to professional growth in pedagogical documentation and "inclusive problem solving" (p. 40). The findings also revealed for researchers, what was there to avoid when experimenting with documentation strategies in order to achieve maximum success with the children, teacher colleagues, and the community.

In a study about wonder and curiosity, Van Manen (2002) emphasized that early on, toddlers begin naming the world around them because they are inquisitive; they are looking for more, and they want significant adults to come alongside and share about the world with them. Van Manen stated, "naming the world is a powerful human activity" (p. 15) and clearly pointed out that it is really much deeper than that. The author argued that in the "whatness" and "thatness" (p. 16) of becoming familiar with new things, young children connect with the world and begin to see themselves as part of it. However, as children grow and begin to enter school, there is a fundamental difference in how some children respond to what they know, either through true understanding or those who appear to have all of the answers or at least seem to but lack a deep interest in the things they appear to know a lot about. Van Manen reminded the reader that although young children begin wondering about their world, this is not always nurtured; therefore, the *wonder* may be extinguished too early, thus leaving the child thinking he or she knows many facts.

In reality, Van Manen argued, the child is quite shallow in his or her thought process, and not really deeply interested in anything for any length of time. So even though a child has many questions and is fed all the right answers, this does not encourage genuine interests or a sense of wonder. Van Manen emphatically stated that "true wonderment does not ask a thousand questions" (p. 19) but rather, it is "in the stillness of wonder" (p. 19) that relevant, deep questions that are worth of inquiry arise. Van Manen's added that a child should "live the question," (p. 19) pausing to contemplate-rather than giving a quick answer with no substance or deep thought involved. In essence, children (with some adult support) should be encouraged to explore through their own investigation, engagement, and interaction with their world. Furthermore, Van Manen (2002) raised the following interesting question: Can we, as educators, really lead a child to wonder or does the individual need to be open to the wonder? After reflecting on his own children's experiences of wonderment and curiosity during a family outing, Van Manen concluded that perhaps the wonder has to come from within the child, by "their own sense of wonder and curiosity" (p. 21). Quite to Van Manen's surprise, his children had wondered about things that totally eluded him in an example given of the children seeing the Northern Lights on a dark prairie night. He concluded that while parents and educators may not be the ones who can totally come alongside a child and encourage him or her. Similarly, Harvey and Daniels (2009) encouraged educators to clarify what it means to be curious and to model their own curiosity in front of their students. For example, the birthstone project (a project in my classroom described in Chapter Three) came from the children; hence, it is safe to conclude that these students were already curious and wanted to learn more about their wonderings with support and guidance.

#### **Summary**

In Chapter Two, I first expanded on the previously introduced theoretical framework that informs and supports my topic, and presented a brief, historical perspective of the Reggio approach to learning for the reader to have a clearer understanding of the origins of documentation and project work. Next, I focused on the literature that builds communication, meaning making, community, and public space through documenting inquiry-based learning. Literature was also reviewed with the purpose of exploring a sense of wonder, curiosity, and imagination through inquiry-based learning through practical applications in the primary classroom. In Chapter Three, I outline connections to my practice within the classroom with regard to documentation of inquiry-based project learning, and describe the process of creating a classroom blog.

# **CHAPTER THREE: CONNECTIONS TO PRACTICE**

Once children are helped to perceive themselves as authors or inventors, once they are helped to discover the pleasure of inquiry, their motivation and interest explode. (Malaguzzi,

# 1998, p. 67)

In Chapter Three, I present the research I participated in as part of my school growth plan, including the inquiry projects my class completed this year. I also connect my literature review to my classroom practice through a brief description of two of the four inquiry-based projects my class participated in this year, namely 1) Super, Spectacular Space Project, 2) So You Think You Can Dance Project, 3) The Birthstone Project, and 4) Canada the Beautiful Project. In addition, I explain the implementation and development of my classroom blog that I am in the process of using in order to document my students learning for the purpose of sharing with parents, colleagues and the greater community.

# **Connecting Literature Review into Practice**

When I first began experimenting through documenting inquiry-based learning in my primary class last year, I felt that I was able to reflect on children's thought processes and feelings deeper than I had ever done before, and it profoundly changed the way I looked at planning, assessing, and documenting children's learning. I began to observe children's excitement in working together and became intrigued. In my practice, I strived to make learning more meaningful and relevant to the children, parents and myself.

### **Beginning Application: Questioning is the Foundation of Inquiry**

This year, my goal was to explore documentation of inquiry-based learning more deeply in the primary classroom. However, I did not plan to do an inquiry project in the fall term because I felt I needed to first teach the children much needed skills to work successfully in an inquiry group setting. I began teaching the basic skills of questioning during our first science unit on Rocks and Minerals.

This year, University Highland Elementary (UHE), the school where I teach, practiced Bloom's Taxonomy to teach different levels of questioning that is essential during inquiry investigations (Bloom, 1956). Malaguzzi (1998) warned that a school is responsible for developing new dynamic aims for children or else it runs the risk of remaining the same over time. Consistent with the principles of the Reggio Emilia approach, the school I currently teach is open to changing and reinventing itself to meet the needs of all learners. As part of our school plan, all staff agreed that we would collect data on children's ability to ask questions for the purpose of inquiry-based learning. I first began teaching how to ask teaching the basic questions: "who," "what," "where," "when," "why," and "how" in my class in October. After teaching a series of lessons on the different levels of questioning, I had my class ask questions about their inquiry. Harvey and Daniels (2009) have reminded educators that questions reveal about what children really wonder and are curious to explore.

Teachers within each class at UHE prompted their students to ask questions about their Learning in Depth Project (LiD) at three specific times during the year. The LiD philosophy was created by Dr. Kieran Egan (2010) with the premise that children are given a topic in Kindergarten and continue to inquire about their topic until Grade Twelve. This is specifically for them to have an opportunity to learn in depth about a particular subject over a long period of time. UHE staff agreed the whole school would implement LiD this year every Wednesday afternoon, and we would continue to implement inquiry-based learning in other subjects. The formal questions were completed by the children in November, February, and May to observe if the students' level of questioning became more sophisticated over time (see Appendixes B and C). The final data revealed that for the majority of the older students, (mostly Grades Three and up) their levels of questioning gradually increased. For younger students, (Kindergarten through Grade One) the majority stayed within the knowledge and comprehension stage of questioning. More specifically, the Kindergarten data revealed that some students in this grade were learning to differentiate between questions and comments, while other children were able to ask knowledge questions, and gradually moved to asking some comprehension questions by the end of the year. From these findings, our staff concluded that a child's individual level of development played a major role in how well they are able to ask more sophisticated questions. Therefore, the study revealed, some children were developmentally ready to apply what they had learned about Bloom's taxonomy of questioning from our focused lessons and in-class writing practice, and may had also made steady progress.

## **Classroom Inquiry Projects**

In this section I briefly describe two inquiry projects, and then I focus a more in-depth look at the other two projects completed in my classroom this year. One inquiry project the children wanted to explore was *"Super, Spectacular Space"* and focused on the solar system. Small groups of children chose the top three planets they were most interested in learning more in-depth. To gradually teach how to ask different levels of questioning from Bloom's Taxonomy as the year was progressing, the children and I discussed *deep* versus *shallow* questions, and I used the analogy of swimming, since the children were taking swim lessons at the SFU pool each week. With some negotiation, the groups were formed, and the children were off discussing what they wanted to explore about their planet. While walking around the room, I overheard children discussing what "cool" and "exciting" things they wanted to find out about their planet to share with the class. The children negotiated and first came to the conclusion that they wanted to each make a 2-D model of their planet and place them on a large mural for their presentation. Each group worked on their inquiry questions and findings, including their planet art for approximately 6 weeks. Some groups also made 3-D pop up cards to be placed on the large mural, some with *deep* questions to engage their peers when it came time to present. As a large group, the children negotiated who would be gluing, drawing or painting on the large mural.

The other inquiry project entitled, "*So You Think You Can Dance*," took me by surprise because it was in the curriculum area of dance. I did not intend for this to be an inquiry experience; however, it naturally enfolded around us and became a beautiful ending to our year together. The children wanted to explore many types of dance so together and so we explored and practiced moves in aerobics, ballet, hip-hop, Latin, and creative dance. The children then asked if they could investigate one type of dance more deeply and choreograph their own dances in small groups. I helped choose balanced groups where one person was the leader. This project taught me that inquiry-based learning could be presented through physical displays that are not tangible; however, they are very powerful. From this experience, I would like to have the children explore inquiry through drama next year because of the power it evoked through dance. The following two projects will take a more in-depth look at inquiry-based learning my primary classroom.

# **The Birthstone Project**

For this project, we first had directed instruction that included some background knowledge and allowing students to have time to explore the properties of and classify the three categories of rocks, igneous, sedimentary and metamorphic. This stage included a visit from a Vancouver geologist. Soon after, the children began asking more questions from the questions they originally brainstormed about rocks and minerals. A group of my Grade Three students came to me and asked if they could do inquiry project on their birthstones after I read an oversized book on the history and origin of birthstones. Malaguzzi (1998) has reminded educators that in order for a project to be worthwhile, it "must produce or trigger an initial motivation" (p. 90) within children. He further explained that some children need more time to "warm-up" (p. 91) in the beginning stages of the project, while others require a challenge to their ideas as they interact with their peers before they become fully motivated. I found this to be true in my classroom.

The children I taught last year in Grade Two enjoyed inquiry projects and felt this would be a really interesting subject to explore. Some of my new students were not sure what the others were asking about because they had little, if any experience with inquiry-based project work. However, they were in the process of being encouraged to wonder, imagine, and become more curious as they asked questions about rocks and minerals. They did, however, see the excitement in their peers over the birthstone project, and it did not take long for the motivation and excitement to spread to the rest of the class.

I initially became concerned because our unit on Rocks and Minerals was wrapping up and we did not have the extra time for an in-depth project. I wanted the children to explore their birthstones because they had chosen this topic. Katz and Chard (1998) emphasized that projects provide children with the power to make their own decisions and choices. From my experience with inquiry last year, I know this to be true; therefore I really wanted to allow time for this project. While bound to the Ministry of Educations Prescribed Learning Outcomes (PLO's) each term, I believe there is room to be creative. The PLO's are set by the British Columbia Ministry of Education (2013) in each grade level and subject area. Educators are mandated to cover all PLO's over the course of the year and choose them accordingly in each reporting term. Although this inquiry project would run into our next term, I decided to take the risk of not completing the following science unit before our next reporting period. To get around this deadline, I chose not to report on science for our second term- as teachers are only mandated to report on science and social studies twice per year. I firmly believe the children (even the younger Grade Two students) were engaged during this project because they were deeply attached to it.

As mentioned in Chapter Two, Bruner (1998) noted how Reggio preschools are special because the space and place are special in that it invites children to grow intellectually, emotionally and socially. Through these experiences, the process of learning was meaningful because the children were given "personal ownership" (p. 147) over the process of their project right through to completion, thus entrusting them with the validation that they were treated as "the authors of their own personal identity" (Craft, Cremin, & Burnard, 2008).

American educator Dot Schuler (2000) has done extensive project work in her primary classroom, and has advised educators to look at the project approach as a new way of thinking and teaching compared to teaching subjects in isolation. Schuler's work has inspired me to try more projects in my classroom this year because she expressed confidence that it is worth the struggle to make change. Schuler revealed that it is through project work that many state standards (equivalent to the BC Ministry of Education's PLO's) were fully met, especially in Language and Visual Art outcomes.

I have realized through practical application that theory building takes a lot of time and patience on both the student and the teacher. However, it also encourages deeper engagement with each other, and with the specific materials chosen. Rinaldi (2006) brought up an interesting point as she reflected on Reggio's "certain concept of time" (p. 18). Rinaldi revealed that a school actually gives a gift to the children and teachers when it allows time not only for working and playing, but also for building relationships and vital connections with each other. What I have learned from this process, as we embarked on the Birthstone Project, is that the Reggio approach not only provides educators with 'methodology' but it also represents a profound way of looking at educational knowledge and practice in a very different way.

I have come to really appreciate the Reggio approach of valuing children and teachers in the education process. I also learned through the process of implementing inquiry-based learning that I needed to be willing to give up some control and let the children lead because I wanted to convey that they I truly believed they were capable of making their own meaning during their birthstone project. This encouraged confidence and growth in the children because they felt fully trusted to explore what they were interested in during the length of the project.

For the inquiry project described in this section, I placed the children into groups depending on what month they were born. Usually for inquiry projects, I place children accordingly so that strong students can help lead students who may require more guidance. I was not sure how the groups would work as we began to look at the birthday graph, and felt somewhat apprehensive. For example, I decided that if only one child was born in September, then he or she could be paired with the October group so that no one was left working all alone. Some groups needed more support than others depending on who ended up with the same birth month. However, I must say each group was creative and learned to work together with teacher support and guidance.

Students first worked as a whole group and posed general questions for our wonder web; as the children pondered, they became more curious about what they wanted to learn about their birthstones. We placed these on a large chart paper. After they broke into their groups, they began discussing what they wanted to focus on asking about their particular birthstone. Each child wrote questions in their science journal, and then they compared their questions. They negotiated for the questions they wanted to ask as a group. Finally, the children wanted to invite their parents to present their projects, and we hosted an informal breakfast as the children presented their birthstone projects to their families. This activity connected with Harvey and Daniels' (2009) suggestion about the importance of children taking what they have learned and to make it public through a presentation, as introduced in Chapter Two. I reminded parents that the end product is not the important part in this activity, but instead the process of learning during the inquiry project, with a focus on creativity, curiosity and imagination. The children did a remarkable job considering some of my grade two students had never done an in-depth formal presentation in front of parents before. An additional connection established through this project refers to Katz and Chard's (1989) statement about children being deeply engaged in worthwhile activities, including inquiry-project work, and their finding enjoyment in learning. Since creativity is the basis to inquiry, it came to no surprise that the children found this process very satisfying, especially when working with others in a group, as Malaguzzi, (1998) and Rinaldi (2006) have suggested. The children displayed genuine wonder and curiosity in their investigations into their birthstones, and it was evident that they were enjoying the learning because it was visible to anyone who visited our classroom. It was a magical morning of making the children's learning visible with parents and

families, and I felt much validated that I took the risk to let the children lead this very important project.

Throughout the completion of the Birthstone Project, I had the opportunity to experience how children entered Vygotsky's zone of proximal development (ZPD) with the help of their more capable peers, and this was a beautiful to observe during the inquiry process (Malaguzzi, 1998; Rinaldi, 2009). Since experimenting with this type of inquiry, I have now embraced combined classes. More specifically, combined classes are presently what the B.C. Ministry of Education (2011) describe classes that use to be termed "split classes" where two grade levels are combined. For example, my current class is a combined Grade Two/Three class. Through this project, and other similar experiences, I have come to thoroughly enjoy my combined class because I have observed the beauty of children working together and helping each other to move in new pathways and directions with the help of more capable others. In the following paragraph, I explain our next project in Social Studies.

## **Canada The Beautiful Project**

The next inquiry project we launched was our Social Studies unit on maps, including the major landforms and bodies of water in Canada. The children eagerly raised their hands and asked if we would be doing another inquiry project. I said we would be; however, I wondered what kind of project they would like to do that was perhaps different from the Birthstone Project. We had a group brainstorm session, and the children came up with making 3-D maps of Canada and the Northwest Territories. The children needed to be in pairs to cover the whole of Canada with a small group covering the Northwest Territories. They all decided they wanted to use plasticine to build their 3-D maps (we were working on a 3-D unit in Math at the same time which sparked this use of materials) so I enlarged each provincial or territorial map and we placed them on large cardboard pieces that were covered with coloured paper of their choice.

As we began, I asked the children to provide me with their 3-4 top choices of province or territories they wanted to investigate. The children's reasons for choosing particular provinces or territories were interesting. One grade two girl asked to investigate Manitoba because she was born there. A third grade boy asked to investigate Ontario because his older sister was going to be attending university in that province in the upcoming fall. One of my ESL level one students wanted to investigate British Columbia because he was new to the country and wanted to know more about the new province where he was living.

I tried my best to pair the children according to their interest and with someone I felt would complement the other. I observed children in Vygotsky's ZPD as they worked just beyond their comfort zone with the help of a more capable peer. I remembered that Malaguzzi (1998), inspired by both Piaget and Vygosky, has reminded educators that children need to be somewhat discrepant in their developmental area when working with others; without "producing excessive disequilibrium" (p. 94) that causes too much difference between children's development levels. This can be a challenge in inquiry when trying to arrange children to work with a variety of others.

To meet the prescribed learning outcomes, the children were told they needed to focus some of their questions that pertained to the major landforms and bodies of water in their respective province. However, the children were reminded that they could also ask any other questions they wanted to about their province or territories and add it to their project. The pair that worked on the province of Nova Scotia also wanted to investigate the icebergs in the Atlantic and very intrigued with the history of the Titanic and the Canadians who helped rescue the survivors. They enjoyed gathering books and looking at websites about icebergs and learning about the sinking of the Titanic.

From this example, I learned that I needed to be flexible and let children *drift* to a new area of their project when they displayed curiosity and interest in something intriguing. In creative curriculum, I realized the need to give up control and trust and believe in new possibilities. This pair of students was making connections between and across ideas, events and contexts. I realized that this is the belief that the child is the protagonist and able to discover, invent and explore new ideas, just like Piaget (1950), believed that children have the ability to adapt to new situations and are capable of learning new things.

The student pairs began asking their questions as they spread out in the classroom and into our shared pod. One pair inquired about the ice age and wondered if and how this impacted the landforms of their province. Another pair asked how the Rocky Mountains were formed in B.C. The children's inquiry reminded me of Harvey and Daniels' (2009) suggestion that inquiry based learning is comprised of a range of curricular, philosophical and pedagogical approaches to teaching practice. However, its core premises include requirements that learning should be based on student's questions. I also connected with Van Manen's (2002) reminder to educators that "meaningful learning often begins in wonder" (p. 19) and therefore, even if a child is unable to find the answer to his or her questions, each one is worth stopping to ponder and imagine. It is through this process that children develop curiosity to discover more.

Through this project, I also found it interesting to observe children build new

relationships with each other and their teacher as they collaborated together by exchanging ideas, questions, thoughts and actions. This realization brought me back to Malaguzzi's (1998) call for educators to be aware how through group work, children begin to realize their relationship with others' that goes beyond mere friendship. Their relationships expand as they begin to observe their peers as people with relevant ideas to share. In addition, they begin to interact differently, with some children emerging as leaders, others as recorders, and others as builders or helpers. From this group work, I had a deeper realization, in my newly formed awareness, that they are the inventors and capable of their own learning process.

This process transformed the classroom from a teacher-directed environment to a studentled environment where the children become empowered, courageous and persistent risk takers who construct their own theories. Through this project, I also learned that theory-building takes a lot of time and patience, and that I needed to accept that I may not address specific PLO's within the time frame specified for each term -- as the children were engaging more deeply with their projects-- or at least, in the precise way PLO's were structured. Similar to the Birthstone Project, the Canada Project required my being willing to give up some control in order to allow the children the time needed to fully wonder, question, develop curiosity, and creativity within their groups and to take their projects as far as they needed to go. Interestingly, Vygotsky (1978) observed that a child's imagination flourished during dissatisfaction in what he or she was trying to accomplish, as it had been the case for students during this project

In describing these inquiry-based experiences, it is not my intention to imply that the children never argued or had disagreements during the inquiry process. Quite on the contrary, I think one of the most beneficial things the children learned through their inquiry projects was

how to more effectively problem-solve and negotiate with each other during conflict. New's (1998) work focused on Reggio schools reports that through extensive research children's conflicts also contribute to cognition as they learn to co-construct knowledge together. New's statement refers back to Vygotsky's sociocultural theory in that children also learn and develop from having conversations with their teacher and peers (Hill et al., 2002). Ongoing conversation is central to inquiry-based learning, and since children love to interact with each other, it is no surprise why they enjoy inquiry projects over teacher directed learning. Likewise, Dewey's (1916) social learning theory advocated that children learn how to problem-solve and think critically with each new experience and are better able to apply perseverance skills through ongoing project work (Glassman &Whaley, 2000).

In order to document inquiry-based learning more easily, I found out that through the development of a classroom blog, I could use this blog as a practical classroom resource. My blog, described in the section that follows, is intended to reveal the processes of student inquiry that connects with the wonder, curiosity, and imagination in the primary classroom.

## The Development and Implementation of My Classroom Blog

This year, I began the process of implementing the technology needed in order to develop a classroom blog for the purpose of sharing documentation of inquiry-based learning with parents, colleagues, and the greater community (see Appendix A). A blog is an on-line tool, used for communicating certain information to a specific audience. Blogs can be private, semi-private / semi-public depending on ones intent. Each blog should begin with a specific purpose that is clear for the intended audience (Powell & McCauley, 2012). More specifically, a blog is essentially an online discussion board where the audience is invited to participate by viewing, posing questions or commenting (Bender, 2012). William Bender's (2011) work on

project-based learning has highlighted the possibility of incorporating blogs in the classroom. Bender has stated that classroom blogs are a motivating way for students to interact by providing an ongoing discussion of learning, thus encouraging connections between students, student and educator, and the greater community.

This past school year, I used my district pro-growth day as well as other professional development opportunities to learn how to set up and navigate my classroom blog with the help of the Burnaby District technology team. The Burnaby District requires that, before teachers can set up a blog with the district, we must explain (to the technology team) the specific purpose for the blog. I learned that this is due to the fact that without real purpose and intent, many blogs are abandoned after a short period, many times due to teachers' time constraints or to limitations with technology. I was very clear on my intent and purpose from the beginning, and I was determined to maintain my blog; therefore, my classroom blog was set up immediately. However, in order to allow for me to have the necessary time to learn the technology on how to set up and navigate my blog, the blog was not linked to the district site this year. My classroom blog has a link (see Appendix A), but it is password protected for issues of privacy and confidentiality.

My blog now allows me to upload pictures of the children's processes fairly quickly. This is in contrast to the more time-consuming process of documentation through learning stories to be then shared them with parents. In addition, the blog has the potential to invite conversation from the children themselves. Children are more equipped to reflect on the work with which they have engaged, and the parents and community are invited to share in the dialogue because they will have access. This process also echoes Reggio's approach to learning - -a process that requires the help of many others. At the same time, this follows Bronfrenbrenner's (1979) posits

and Malaguzzi's (1998) teaching principles about how relationships play a central role and are vital to meeting one's potential. Therefore, my classroom bog will have the potential to build relationships with the greater community by making learning digitally visible. Parents will be welcome to comment, add questions or perhaps will make suggestions through the blog about their child's process of learning.

In terms of the learning curve experienced while creating my classroom blog, I actually thought it would be easier than it has been in terms of setting up and learning how to format photo galleries. However, I do believe as I have more time to build and develop my blog, it will become easier to document learning on-line. The process of learning the technology of how to upload the specific learning and links one want to share requires time, training, and much practice. On the other hand, once one learns the process, in my experience, documentation becomes so much easier, and enjoyable. While my blog is still in its infancy (see Appendix A for sample items already posted) it will be further developed as my ongoing professional development. My goal is to be able to learn how to better format photos and document learning more efficiently and effectively. My classroom blog is intended to invite public space where parents and the greater community has a place to view and dialogue with each other about what is happening in the classroom. Glassman and Whaley (2000) revealed that documentation can represent a "living diary of a project" (p. 7), and indeed opens up new possibilities for children and their families. My classroom blog will have the potential to capture the "over time" process of inquiry-based learning as children engage in wonder, curiosity, and imagination with one another other in practical ways. Personally, the added stress and cost of printing photos with stories or creating documentation panels had become overwhelming and time consuming, beyond my working hours. I have discovered that my blog is the best way I can accomplish my

goal of documenting learning while respecting the demands of my work -- and the needs of my personal life-- by separating the two.

This is why, in my experience, classroom blogs make documentation doable in an already full day of planning, teaching, supporting, assessing, and organizing. In addition, I believe my blog will have the ability to reach parents and families who may not have time to visit the school (a reality in my classroom, and readily observed in many school districts). The majority of my parents work full-time and their children are dropped off and picked up by the local daycare. Therefore, a classroom blog invites parents into our classroom at their leisure. Since not all parents could make it to our presentations, their child's videos could be also uploaded so that these could be viewed with their child and discussed at home. In addition, I plan to upload short videos that capture learning and also plan to give my new students our school cameras (following lessons on how and why we are using them) to encourage them document their own learning to upload and share. This is also because digital documentation has the potential to capture authentic moments by visually displaying learning as it unfolds daily (Fraser, 2012). At the same time, Rinaldi (1998) reminded educators that it is through the process of documentation that they have the "a unique opportunity to listen again, see again" (p. 121) as educators – and parents-- revisit and interpret the contexts where children have participated. Reflection on the part of the educator is good practice because, as Malaguzzi (1998) has indicated to educators because it provides opportunity for teachers to constantly question their teaching" (p. 69), and to be more open to learning from their students and parents.

This process has led me to realize that as educators, we do need to humble ourselves and be willing to learn from others and not try to pretend we are the only keepers of knowledge. The notion of personal funds of knowledge are what an individual possesses due to their family background, culture, or experiences that are so valuable (González, Moll & Amanti, 2005). Therefore, we can truly miss the mark if we are not willing to learn from others' diversity, values and traditions, as Bronfrenbrenner (1979) also implied in his ecological systems' theory. I believe digital documentation has the ability to transform the way we view others with the knowledge they possess to share with us. Ultimately, it opens the classroom up to include other voices in the education process, including the children's.

Without a doubt, I am reminded through these classroom experiences that when the child (including teacher or parent) are curious, they can begin inquiring together, and will begin to mutually construct wonder, curiosity and imagination (Egan, 2010). A wise educator (or parent) will seize the opportunity to encourage the child's interests and questions to help him or her begin to create their own well-told story that can be documented for the purpose of making learning visible and acknowledged by the larger community.

#### Summary

In this chapter, I connected the reviewed literature to my practice of inquiry-based learning in the primary classroom and presented relevant examples that helped to promote a sense of wonder, curiosity and imagination during in-depth inquiry investigations. From the experiences in my classroom with inquiry-based learning, I gained a similar level of satisfaction like I did when teaching preschool. The children had more autonomy and became constructors of their own knowledge in the process. In addition, the building of relationships with the greater community through public presentations and the process of documentation complemented my classroom practice. In this chapter I also outlined and described the process I underwent for the implementation and use of a classroom blog. This blog will continue to aid me in documenting children's processes as they participate in inquiry-based learning so that I can more effectively and efficiently share with parents, colleagues and the greater community. In Chapter Four, I reflect on my learning throughout the project that addresses my guiding questions. I consider limitations in terms of what goes beyond the scope of this project. Finally, based on the limitations identified, I outline directions for future research and practice.

## **CHAPTER FOUR: CONCLUSIONS**

Imagining something may be the first step in making it happen, but it takes the real time and real efforts of real people to learn things, make things; turn thoughts to deeds or visions into inventions.

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(Fred Rogers, 2003, p. 99)
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I begin Chapter Four with my personal reflections based on what I have learned through the completion of this Capstone Project. The research on documenting inquiry-based learning has provided primary educators with valuable information on how colleagues, administrators, parents and the larger community can work together to support children in their learning through public space. From my literature review, I have demonstrated established the impact that documentation of inquiry-based learning has on the child and educator as they work together by asking guiding questions, working collaboratively with others, and reflecting on the process. As a result of my investigation of documenting inquiry-based learning, I have come to realize that while change is difficult, it is rewarding when one sees the connections made between theory and practice (Bronfenbrenner, 1979; Bruner, 1966; Dewey, 1916; Piaget, 1956; Vygotsky, 1979). More specifically, the richness of Reggio approach to learning can be credited with offering me the courage I needed to experiment with inquiry-based learning in my primary classroom. I am better informed about the process and time needed for inquiry-based project work, and how this impacts the required PLO's each reporting term. In this concluding section, I address my guiding questions, include limitations, and suggest possibilities for future research in this significant area of progressive education.

In addressing the first guiding question, "How can documentation of inquiry based learning reveal a sense of wonder, creativity, and imagination in learning for primary (K to grade 3) educators?" I have come to the understanding that changing from more traditional ways of using direct instruction to student-led inquiry benefits the children because they become the authors and inventors of their own work (Harvey & Daniels, 2009; Malaguzzi, 1998). After much reflection, I realize that the inquiry projects, as described in Chapter Three, were well worth the extra time and adjustments required. Malaguzzi (1998) cautions that educators "should not be in a hurry" (p.84) because children cannot be expected to learn on our timeline, but rather at there own natural pace. However, Reggio schools do not have to follow a planned curriculum as we do here in North America. Malaguzzi argues that it is "the behaviourists" who prefer "units and subunits" (p.87) that distinctly separates the Reggio approach and our current school system here in North America.

In addressing the second guiding question, "In what ways can documenting inquirybased learning facilitate collaboration between children, teachers, parents and colleagues?" I realized that I have benefited greatly from the time spent to understand more deeply the construct of documenting an inquiry-based project-approach through exploring specific aims, benefits and constraints (Harvey & Daniels, 2009; Fraser, 2012). In addition, it was extremely helpful to explore the historical relevance of theoretical and philosophical contexts, especially the Reggio Emilia approach and teaching methodology that paved the way for more progressive education (Rinaldi, 2006; Vecchi, 2010). This not only informed my practice but also helped me to reflect on what I could improve upon during the documentation process (Hill et al., 2005). I am extremely grateful to those who continue to write for the benefit of progressive education because they encourage educators like me to experiment with new ways of thinking and practicing that benefit children and families.

Essentially, documentation leaves a history of posterity for a school community that enriches those who have participated in the process (Katz & Chard 1998; Hill et al, 2005). I believe this is vitally important; we as early or primary educators should be keeping a history of learning that reaches beyond, or in addition to posting yearly photos in the classroom or foyer. When I reflect on my own learning, and my children's learning, I have very little documentation to look back on. Although there was a small progression that included a few photos teachers shared when my children were in school, beyond that, the rest is a distant memory. When we take the time to document, we give children the value and public space that they so rightfully deserve.

In addressing the third, and last, guiding question, "What are ways that web-based resources, and namely, blogs, can capture documentation of inquiry based learning within the classroom?" I have observed, drawing from my experience with documentation of inquiry-based learning this past year that inquiry-based learning has the ability to engage and reflect on children's learning in profound ways. For example, the conversation surrounding learning while a child was with their partners or in small groups was fascinating to witness. More specifically, it is the self-reflective awareness that is promoted by the educator and students that makes the documentation process so powerful. I have also observed that inquiry is a combination of imagination, invention, and creation that requires time, space and collaboration with others. Inquiry-based learning also invites educators, parents, and the larger community into the school, either physically through presentations, open houses and assemblies. In addition, digital documentation causes parents to be more aware as to what is happening in their child's day even

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when they cannot be physically present at school (Harvey & Daniels, 2009; Hill et al., 2005). My intention is to further develop my blog for the purpose of inviting children's conversations of their learning as well as parental conversations (Bender, 2011). From my interpretation from some of our documentation this year, I also observed that inquiry-based learning appealed to my students who are English Second Language Learners. They were fully engaged, and really enjoyed working with helpful peers that made them feel welcome as contributing members to the project. As for the purpose of documenting student processes in our classroom, I will continue to develop my blog and request the technological support and development, as I need. This is in order to achieve my long-term goal of making documentation doable and a regular part of my practice. I look forward to having more on-line conversations with students and parents, and will also encourage conversations with each other to build a more inclusive, collaborative school community (Harvey & Daniels, 2009).

## **Concluding Thoughts**

While completing this Capstone Project, I am reminded that when the children are curious, they will begin inquiring together, and will also begin to mutually and naturally construct curiosity and wonder (Buhrow & Garcia, 2006; Rinaldi, 2006). I have come to observe that children do develop perseverance and problem-solving skills throughout inquiry project work because they are attached to what they are learning and know how to make their own meaning (Glassman & Whaley; 2000; Katz & Chard, 2000). In addition, educators, like me, will need to make the much-needed adjustments to allow the time required for such investigations. A wise educator (or parent) will seize the opportunity to encourage the child's interests and questions to help him or her begin to create their own well-told story.

In closing, Rinaldi (2006) reminds educators that it is "a quality of human life" (p. 112) to wonder, question, imagine, and create since children are very capable of constructing their own theories about their ideas. Indeed, there are multiple ways of knowing-children do speak in one hundred different languages, or perhaps, even more if we only take the time to notice and give value to all of those marvellous children placed before us. It is truly an incredible privilege.

## **Limitations and Directions for Future Inquiry**

In this section I describe limitations based on the reviewed literature on the topic of inquiry-based learning. I then outline directions for future research that I intend to explore as I continue to incorporate inquiry-based learning and the use of my blog into my classroom practice.

In terms of the reviewed literature, and as discussed previously, changing how things are taught and the time restraints are obvious limitations. Definite risk taking was required on my part from the teacher-directed approach to an inquiry-based approach (Harvey and Daniels, 2009). In order for children to develop wonderment, develop curiosity and imagination, the way we teach presently must be further examined. I agree with Ann-Marie Clark (2006) when she advocates for project work. Clark is honest in looking at areas where teachers struggle. She recommends that change required in both thinking and practice in order to successfully shift from an inquiry model within the primary classroom "may take some teachers longer than others" (p. 8). I feel strongly that inquiry project work has been somewhat easier for me to implement because my work is fully supported by my administrator, colleagues, parents, and the school community.

As a primary educator, I am constantly asking myself: "Why do we need to hurry so much in elementary school?" Then the answer is right in front of me since there are pages and pages of curriculum to get through, assemblies, visiting speakers, library, music, gym, special events and the list goes forward in an never-ending spiral. Katz and Chard (1989) have admitted that teaching is challenging, and ask educators to look at the project-approach as just *another* challenge to overcome. As an educator, I believe we need to look for windows; small openings that allow us to quietly challenge the current system while continuing to meet the required learning outcomes set out by the BC Ministry of Education.

In this regard, the BC Ministry of Education (2011) is currently working on developing a new curriculum plan entitled, the "BC's Education Plan" after listening to educators' concerns about the amount of curriculum that must be covered each year, not to mention if one is teaching a combined grade. The proposed BC Education Plan is revisiting the current way curriculum is delivered and is looking at how this could best meet the needs of children and educators in a rapidly changing world. In other words, covering the breadth, not the depth of learning is becoming a public issue here in BC. The BC Ministry of Education has also acknowledged that children require the freedom and time to allow for more in-depth, inquiry-based projects that encourage creativity and personalization in learning. However, if primary educators want to currently implement the project approach in their classrooms, some adjustments must be made. Therein lays the problem of "how" and "when" to make the adjustments to one's current practice to promote inquiry-based learning. As previously stated, in my experience, inquiry-based learning requires some risk taking on the part of the educator.

Interestingly, the Primary Program (1990) has been encouraging the inquiry- project approach among all the other curriculum outcomes to be met for some time. However, the 60

problem remains that children require adequate time to deeply investigate a topic and should not be rushed to move onto the next activity (Egan, 2010; Harvey & Daniels, 2009). Based on the findings of my literature review, and drawing from my experiences, I believe we show disrespect for children when we do not provide the length of time they need to fully inquire, imagine and create something from natural wonder and curiosity. However, over scheduling continues to be a challenge in the primary classroom. There needs to be supports in place for the important work of children, and that includes time and resources. On the other hand, I am reminded that when the children are curious, they can begin inquiring together, and will mutually construct curiosity and wonder. Likewise, I concur with Malaguzzi (1998) in that educators will need to make the much-needed adjustments to allow the time required for such investigations.

In terms of directions for future inquiry, while some criticism existed around the implementation process of inquiry-based learning, most of the reviewed authors agreed that an inquiry-based project approach benefited children in the primary classroom because it fostered deeper questioning, critical thinking skills, collaboration, including better verbal and writing skills (Glassman & Whaley, 2000; McAnnich, 2000). The vision of a community that could be built around long-term inquiry projects is a powerful thought. This deserves careful consideration and should be thought about more deeply when contemplating the project-approach in a primary classroom. Yes, we as educators know that teaching is a challenge regardless of what type of curriculum is implemented. At the same time, and in light of current research including studies reviewed in this project, perhaps educators could contemplate the development of dispositions and positive attitudes towards change, and conceive challenges as opportunities for growth and renewal.

From my experiences with documenting learning inquiry based this past year, I presently feel better equipped to continue to implement inquiry projects within my classroom because I have gained confidence from the experiences outlined in Chapter Three. Specifically, I am inspired by Fraser's (2012) work in terms of the Reggio philosophy that supports such an approach to learning has greatly reinforced my practice in the primary classroom. My students and I will continue to learn from the reflective practice that documenting inquiry-based projects provides.

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Appendix A

Classroom Blog

The main purpose of this blog is to document and share the wonderful processes of learning as they are transpiring in our classroom. It is also intended to invite conversations with students, parents and the larger school community

Mrs. Timothy

Grade 2/3

### University Highlands Elementary

http://blogs.sd41.bc.ca/timothyk



- BLOGROLL
- <u>Math Games</u>
- <u>Math Practice</u>
- GENERAL LINKS
- Kids Yahoo
- <u>Scholastic for Kids</u>
- <u>Solar System</u>
- RESOURCES
- <u>Burnaby Library</u>
- <u>Dictionary</u>
- <u>Typing Practice</u>

Once children are helped to perceive themselves as authors and inventors, once they are helped to discover the pleasure of inquiry, their motivation and interest explode

--Loris Malaguzzi

Thank you Dr. Trottier! A picture paints a thousand words...

The children each chose their favourite planet after going on a "Solar System Hike" with Dr. Trottier around the SFU campus. During the 2.5km hike, the children were able to get a small idea of just how far each planet is from each other. When we returned to school, exhausted, the children and I talked about our trip around the Solar System. We decided to thank Dr. Trottier by making a class book. The children either expressed their favourite part of the hike or something that they learned during our visit to his lab. We had an awesome time learning and experiencing so many new things about our Solar System today!

### BLOGROLL

Skip to toolbar My Sites

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# Super, Spectacular Space Project

Posted on June 21, 2013 | <u>Leave a comment</u> Active Inquiry on the Planets in Our Solar System...

The children really wanted to do an inquiry on their favourite planet! They spent time in their small groups wondering, asking questions and researching through books and the on the Internet over a period of time. Finally, after a class meeting, they decided to create a mural to present to parents and then display in our school to share with the community. The children chose different mediums on their mural: paints, oil and pastels and coloured pencils. The children who drew the asteroid belt were thrilled when they found silver pastels! This project was worth the extra time it took...

Did you know that the Solar System is so huge that it would take 20 years on a plane non-stop just to travel to the Sun from the Earth!

 $\rightarrow$  Leave a comment

Posted in <u>Science</u> <u>Edit</u>

# The Many Faces of Rocks

Posted on June 21, 2013 | <u>Leave a comment</u> How can you tell a real scientist is at work?

Rocks have different qualities. Ask your scientist what they are.

 $\rightarrow$  Leave a comment Posted in <u>Science</u>

<u>Edit</u>

**Fun in LiD!** Learning in Depth was launched by our whole school this year and was inspired by Dr. Keran Egan, Professor here at SFU. Every Wednesday afternoon was devoted to LiD with many projects in progress. Here are some of the projects...

Posted on March 14, 2013 | Leave a comment

Learning in Depth Puzzle Pieces....What do you want wonder about your topic?



Chick Pea stew made by this student and his Mom! Since cooking is this students LiD topic, he wanted to try out some of his Mom's recipes....I can't think of a better way to spend a Sunday afternoon! They both documented the experience—thank you for the wonderful documentation poster and the recipe to share with the class and staff! The children and I really enjoyed your presentation!

This student is researching "how many bones are in the arm and hand?"

She decided to make this today in LiD. She said she loves her topic

"because you can ask a lot of questions about bones!"

A couple students have *Maps* as their LiD topic and chose to build this 3-D map because they said they were curious after seeing 3-D maps brought in by our visiting geologist.

This student is investigating edible roots and chose to make this picture...adding her wonder questions on the bottom of her picture.

This student is investigating musical instruments and built harp this to share with his classmates. He paired up with another student to create a song with the morocco she made. We all enjoyed your music today!



The Recipe Project

This student created an ongoing recipe project. He created these boxes and is having classmates and teachers bring in recipes-either savory or sweet. The cards are provided and will be laminated-so use your best printing, please. He will have a check out sheet and you may try any that you find appealing. Next year, this student would like to create a school cookbook. Let's keep the recipes coming!

Which one is your favourite? Sweet? Savory? Did you try any recipes yet? K and S have a check out sheet so please use it if taking a recipe home<sup>(2)</sup> Please share with us what you made and how the process went for you. We will be making rock candy to celebrate the end of our Birthstone project!



Yummy cookies made and baked during LiD today... Both students were elated that the recipe worked! Well done, boys! Thank you for sharing your creation with us today!

This student is wondering: "what instruments are in the circus?" She paired with another student who was researching musical instruments. After some investigation, they found out that in the beginning, the circus used wooden instruments in their orchestra... and that prompted a student with the LiD topic, 'wood' to join them...wonderful connections were made today! These 3 girls had the best time working together...and decided to pair up again<sup>©</sup>

This boy is thrilled his topic is cooking! He says he wants to inquire about being a chef... and wonders-"who is the best chef in Canada?"

→ **Leave a comment** Posted in <u>Uncategorized</u> <u>Edit</u>

# We had a fun, busy second term! Here are some

## pictures of what we were up to!

### Posted on March 14, 2013 | Leave a comment

These are our New Year goals and the steps we will take to reach them. We have also identified how we will celebrate when we reach our goal. We will revisit these periodically before June to see how we are doing, and if we need to make any adjustments to our goal plan.

In February, we had a guest Geologist come in to share her collection of rocks and maps with the children (she was unable to come in first term). It was so worth the wait! It was a great review, and I was so pleased they remembered to many details from our unit on rocks and minerals. It was interesting looking at the various maps where rocks and minerals are found. Ms. Gardiner was very generous and gave our class some of the maps she brought in. Some students with map topics are eager to use them during LiD time!



The children created maps, maps, and more maps!



Here the students are enjoying being geologists by classifying the three different types of rocks: igneous, sedimentary and metamorphic



Orgami: My sample Valentine mobile with sticks from our school forest!



Here I am just learning how to post pictures from my I-Phone.

## $\rightarrow$ Leave a comment

Posted in <u>Uncategorized</u>

#### Appendix B

Bloom's<sup>1</sup> Cognitive Domain and Levels of Questioning

This figure illustrates Bloom's Original Taxonomy Theory on the left in 1956, and the changes

by Anderson and Krathwohl, (2000) as highlighted in Chapter Three to inform classroom

practice.

Bloom's	Anderson & Krathwohl's		
Original (1956)	Revision (2000)		
Evaluation	Create		
(judgments)	(generate, plan, produce)		
Synthesis	Evaluate		
(production of unique communication, plans,	(check, critique)		
propose set of operations, derivation of			
abstract relations)			
Analysis	Analyze		
(related to elements, relationships and	(differentiate, organize, attribute)		
organizational principles)			
Application	Apply		
	(execute, implement)		
Comprehension	Understand		
(translation, interpretation, extrapolation)	(interpret, exemplify, classify, summarize,		
	infer, compare, explain)		
Knowledge	Remember		
(related to knowledge about specific	(recognize, recall)		
terminology, facts; knowledge about dealing			
with specific conventions, trends, sequences,			
classifications, categories, criteria,			
methodology; knowledge of universal			
principles, generalizations, and abstractions,			
theories and structures)			

*Figure 2.* Bloom vs. Anderson and Krathwohl. Dr. Benjamin Bloom created Bloom's taxonomy for the purpose of stimulating deeper levels of thinking, problem solving and the communication. Bloom's construction of taxonomy is as follows: knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, 1956). In 2001, Bloom's original Cognitive Domain was practically changed from nouns to verbs. At the top of the pyramid the word synthesis is replaced with the word evaluating and evaluating is replaced with the word creating.

<sup>&</sup>lt;sup>1</sup> Bloom, Furst, Hill & Krathwohl (1956); Anderson and Karthwol (2001)

#### Appendix C

Categorizing Questions and Focus Statements with Bloom's Taxonomy (1)

	Knowledge (Identification and recall of information)	Comprehension (Organization, selection and understanding of facts and ideas)	Application (Use of facts, rules, and principles in new situations)	Analysis (Taking information apart and looking for relationships)	Synthesis (Bringing ideas together to create new patterns and build personal meanings)	Evaluation (Making judgments and decisions)
Prompts	List, tell, describe, state, identify, label, recognize, name, who, what, where, when	Relate, interpret, summarize, outline, infer, explain, interpret, who, what, where, when, why, how	Apply, prepare, construct, simulate, discover, solve, why, how, if then	Compare, sequence, contrast, classify, distinguish, relate, same/different, put in order, categorize/make groups	Solve, develop, reconstruct, create, combine, design, rearrange	Recommend, rank, prioritize, appraise, justify, defend, criticize. opinion
Samples	Who'what'when'where? How does? (invites description) Can you identify? (calls for attributes, criteria, etc.)	What is the main idea?     What is meant by? (explanation required)     What are facts? What are opinions?	How is related to Why is significant? would happen if? (calls for prediction)	How does     compare/contrast with     ?     What's the     relationship between    and     ?     What are the     causes and effects of    ?	What might happen if you combined with ? What solutions can you suggest for? What is a plan for? What is your point of view on? How does influence ? What is to?	What is the most importantand why? Which is better, logical, valid, appropriate? What are the effects ofand why do they matter? (calls for judgement What do you know about the situation and what is your opinion? (calls for appraisal and defense)
Frequency						
Goals & Inst	tructional Plans/Notes:					1

Categorizing Questions and Focus Statements with Bloom's Taxonomy (2)<sup>2</sup>

Name: \_\_\_\_\_

Grade: \_\_\_\_\_

Consistently and without prompting knows difference between

comments and questions

Consistently asks relevant, on-topic questions

Will your question help you understand your topic better?



<sup>&</sup>lt;sup>2</sup> Based on Q-Tasks by Koechlin & Zwaan (2006), p. 76