The Development of Learner Competencies and Personalized Learning in the Early Years: A Reggio-inspired Approach as Pedagogy

by

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Abstract

The purpose of this project is to examine the shift to a competency-based approach to education as identified globally in educational reform and as outlined in the redesigned British Columbia curriculum. A constructivist Reggio-inspired approach is proposed as a pedagogy which supports the development of learner competencies. This Capstone project reviews literature that connects to both the foundational principles of the Reggio Emilia approach and core competencies that are reflected in the practice of this approach. Social constructivism provides the theoretical framework for examining the connections of the principles of the Reggio Emilia approach to the facilitation of 21st century competencies. Educator experiences and challenges of a learner-centered focus are explored within mandated curriculum contexts. The environment as the third teacher is presented to consider a conceptual model for a Reggio-inspired innovation space, aligned with 21st century competency development and personalized learning. A guide describing the components of the model, linking the elements of materials, creative technologies and pedagogical documentation, is presented for educators to consider in creating innovative learning spaces.
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Dedication

This project is dedicated to my mother and father. First and foremost, my deep love and respect for children comes from them and their loving example throughout my life. They have encouraged me in my educational pursuits from an early age, and made sacrifices along the way so that I might take full advantage of the opportunities available to me.
Chapter 1: Introduction

“The central act of adults, therefore, is to activate, especially indirectly, the meaning-making competencies of children as the basis of all learning.”

– Loris Malaguzzi (The Hundred Languages of Children, p. 81)

Background

The question of how humans learn, specifically how they learn best, has occupied the efforts of scholars and researchers for well over a century. It continues to concern national and international educational councils, as well as federal and provincial governments (British Columbia, Ministry of Education, 2015a; UNESCO IBE 2013a; Organization for Economic Cooperation and Development [OECD], 2009). Despite the paradigm shifts that have been taking place in the field of education, one thing that remains constant is the need for provincially mandated curriculum. Within Canada, provincial curriculum outlines what it is that students are expected to learn and demonstrate at their grade and subject level. The goal of preparing students for the 21st century is discussed and debated at great length in professional discourse, at parent information sessions, and in the media. In spite of this, the educational system still reflects a model of learning that remains from the previous century.

In 2010, the British Columbia (BC) Ministry of Education (MoE) initiated a plan to address the needs of learners in a changing world and created the BC Education Plan. At the center of this plan is the key element of personalized learning, which is described as “student-centered learning that’s focused on the needs, strengths and aspirations of each individual young person” and consequently the curriculum “will be redesigned to reflect the core competencies, skills, and knowledge that students need to succeed in the 21st century” (B.C. Ed Plan, 2012b, p. 5).
In the province of BC, the MoE acknowledges that “an education system designed in the very different circumstances of an earlier century can’t possibly always meet the challenges students face – both now and in the future” (B.C. Ed Plan, 2012b, p. 3). In response, the MoE created draft curriculum documents presented on the ministry website as ‘Transforming Curriculum and Assessment’ (B.C. MoE, 2013g). The cornerstone of these documents is the key element of personalized learning, defined by a set of learner competencies designed to drive a new curriculum. Core competencies, skills, and knowledge are outlined, emphasizing a shift away from the heavily prescribed content, outcomes, skills and attitudes, and achievement indicators in the current curriculum documents. At the center of the draft redesigned curriculum are core competencies, identified as Thinking, Communication, and Personal/Social. These core competencies are woven across all grade levels and subjects and are intended to support students with deeper learning. The focus on process and competency development is deemed to be critical in contributing to deeper learning, which is described as learning that emphasizes the use of key disciplinary concepts, principles, and generalizations to think critically, solve problems, and communicate ideas (Bellanca, 2010).

Globally, education has been identified with similar sets of 21st century competencies. As noted in Measuring 21st Century Competencies: Guidance for Educators, educators and policy makers have deemed a number of specific competencies to be essential for succeeding in a global economy, such as communication, collaboration, and critical thinking (Asia Society, 2013, p. 4). Although the competencies are recognized as being measurable and supported by quality research, the report concluded that “21st century competencies are an emerging area of research, and we do not always have a clear understanding of the processes through which these
competencies develop” (p. 8). This reality is faced by educators in BC who are encountering a redesigned curriculum with little support as to the pedagogical implementation.

Shifts in learning and pedagogical change undoubtedly affect the role of the teacher. Teachers will need to be reflective and think critically about professional practice. It may be helpful to look at approaches that already have frameworks for supporting the development of these competencies. This project will look at one such approach, the Reggio Emilia Approach (REA), which has its foundations in social constructivist theory. The REA, a leading educational practice in the field of early childhood education, is based on social-constructivist theory and philosophy and has evolved over the past 50 years (Kantrowitz & Wingert, 1991). This approach has theoretical and philosophical underpinnings based on the seminal work of Dewey (1997), Piaget (1969), Vygotsky (1978), and Bruner (2006). At its center is a sociocultural theory of knowledge construction (Vygotsky, 1978), which has informed its pedagogical practice. The notion of knowledge construction continues to dominate educational schools of thought in the 21st century. The origins of the approach are from the works of Reggio Emilia, Italy, and they are unique to that country and context. The principles of the approach, led by the founder, Loris Malaguzzi, endure in educational practice around the globe today (International Innovations in ECE Forum, 2012). Recontextualized for our own learning environments, this approach has come to be known as Reggio-inspired. Susan Fraser (2012) recognized that the REA was one of the first early childhood programs to adapt to political, economic, environmental and social changes and “as such it has acted as a guide for many of us as we struggle to cope with our changing world” (p. xxix). It may well be that it can continue to guide us forward with our educational practice as we encounter significant changes globally and technologically.
The influences and principles of a Reggio-inspired approach may be instrumental in ensuring that BC’s vision for rethinking and transforming curriculum is realized in meaningful ways and the approach may help educators create learning environments that are competency-based, engaging, and personalized for students. The goals of the new curriculum design, preparing students “to become competent, informed global citizens – citizens who are… competent thinkers and communicators, and who are personally and socially competent in all areas of their lives” are at the heart of the REA (BC MoE, 2013f, para. 2). The principles of the REA directly support the development of the identified learner competencies and the approach is not only aligned with the goals of the redesigned curriculum, but it offers a sound pedagogical framework to facilitate the development.

**My Professional Journey**

Maintaining a growth mindset has allowed me, as an educator, to weather and adapt to the many changes in learning and teaching over the past 30 years. Older teachers such as myself love to allude to how often the ‘pendulum has swung’ with regard to the ever-evolving and reinvented curriculum directions, learning initiatives, instructional programs, and pedagogical theories. In recent years, I have been sensing some fundamental changes that I believe are here to stay, once the shifting settles. As global and technological changes rapidly develop, thinking, communicating, and creating are also clearly changing. As such, the landscape of teaching and learning must change, adapt, and be reimagined in ways that will serve the needs of learners in the 21st century.

A number of years ago, I underwent a significant shift in the way I regarded my professional work as an educator of young children. I became less concerned with ‘teaching’ and more concerned with ‘learning’. My quest for greater understanding led me to discover the
Harvard Graduate School of Education’s Project Zero Summer Institute. After applying for and receiving a professional development award, I had the good fortune of attending a week long session with over 400 educators from around the world. I was among professionals who were also more interested in ‘learning’ than ‘teaching’. The overarching theme for the week was in fact, ‘teaching for understanding’, a concept that I had not previously considered seriously, despite its obvious relevance for a teacher. For the first time in many years, I began to critically and reflectively consider what I was doing in my classroom every day.

At the same time, I began hearing many references to the (REA), both in keynote presentations and the collaborative break-out sessions. I was unfamiliar with the approach and interestingly, had not encountered in my career. I vividly recall Howard Gardner attesting to the success of the work by educators using the REA. He confidently expressed that “nowhere else in the world is there such a seamless, symbiotic relationship between a school’s progressive philosophy and its practices” (Edwards, Gandini, & Forman, 1998, p. xvi). My interest in the approach was piqued and when I returned to work, I mentioned it to my Junior School director. She had experienced the approach in her work with several schools in the East and, in fact, she was planning to attend a Canadian study tour in the REA the following summer. She found the experience to be transformational, which set her on a journey of introducing a Reggio-inspired approach to the primary teachers in our school. We engaged in a book study with Carol Anne Wein’s (2008) *Emergent Curriculum in the Primary Classroom: Interpreting the Reggio Emilia Approach in Schools*. I began reading *The Hundred Languages of Children: The Reggio Emilia Approach* as well as professional journal articles about the REA, and felt a strong personal and professional resonance with the ethos of the approach. As an approach or philosophy, its appeal had much to do with the respectful, empowering ways in which children are regarded and
honored that transcended pedagogies, instructional strategies, and educational initiatives. The approach fitted how I wanted my students to feel while they were learning.

Subsequent professional development opportunities led me to discover the REA in other contexts such as the Opal School (a K-5 charter school affiliated with the Portland Children’s Museum, whose guiding principles are inspired by the REA) and the Bishop Strachan School in Toronto (an independent K-12 school with a Reggio-inspired Junior School Program). During my visits to conferences presented by the North American Reggio Emilia Alliance (NAREA) and the International Wonder of Learning Exhibits, I furthered my understanding and interpretation of the foundational principles of REA. A turning point for my professional practice was my own participation in an intensive two-week study tour of the REA several years ago. The profound experience was stimulating intellectually, professionally, and personally, and it united my head and heart as I re-considered the nexus of my professional practice: the child, the learner.

Motivated by how the Reggio-inspired approach has enabled me to successfully deliver the current, outcome-based curriculum and improve student learning and achievement, I will consider extending this to develop learner competencies in the new curriculum. As learning moves away significantly from teacher-directed to learner-centered, I am encouraged more than ever to embrace a pedagogical approach that begins with looking at the image of the child.

The journey is unfinished. I continue to commit to the principles of a Reggio-inspired approach in my professional work. This has not been without challenges as my context of a historic, traditional independent school is highly results-driven in terms of academic standing. I have, however, discovered that this approach can be aligned with provincial curriculum in ways that attest to its enduring principles for facilitating and supporting children’s learning, in ways that are honoring to the child.
The Capstone Project

The overall purpose of this capstone project is to establish a relationship between 21\textsuperscript{st} century learner competencies and a Reggio-inspired approach to teaching and learning. Specifically, this project will examine shifts in curriculum design that put the following core learner competencies at the forefront of this transformation: Thinking, Communication, Personal, and Social. Cross-curricular subsets of these competencies, such as collaboration, critical thinking, creativity, and innovation, which transcend educational reform nationally, will be examined through the lens of a Reggio-inspired approach and its foundational principles. The constructivist paradigm will be considered for its contribution to collaborative inquiry practices encouraged by current pedagogical leaders. The relationship of the principles of a Reggio-inspired approach to the development of learner competencies will also be considered for their connection to personalized learning. The academic research will consider how these learner competencies can be made visible, within a Reggio-inspired approach.

This project will attempt to answer the following main research question: How can a Reggio-inspired approach be a supportive pedagogy for developing 21\textsuperscript{st} century learner competencies? As part of this research project, a digital resource will be created for developing Reggio-inspired innovative practice in the primary grades. This will serve to support educators who have an interest in exploring how the components of a Reggio-inspired innovative learning environment can support the development of 21\textsuperscript{st} century learner competencies. The aim will be to establish a repository of resources for professional practice and the intention is to provide support for teachers as they navigate curriculum redesign.

As our provincial government mandates the implementation of a new curriculum designed for deeper learning, with a movement towards competency-based learning, educators
will need to construct their own understanding and reflect on processes through which these competencies develop. The socio-constructivist foundations of a Reggio-inspired approach are poised to support this new journey. An approach that views children as competent, capable learners who are active co-constructors of knowledge and considered powerful protagonists in their own learning, has much to offer in terms of pedagogical practice. The emphasis on relationships and negotiated curriculum within this approach sets the stage for children to inquire collaboratively and direct their own learning, following their interests, strengths, and passions. This directly supports the goals of personalized learning in the 2015 updated BC Education Plan, which recognizes the needs of students to “be engaged and invested in their own learning” and that this learning should be “initiated, self-directed and interdisciplinary… facilitated and co-planned with teachers” (Personalized Learning in BC: Interactive Discussion Guide, n.d., p.11).

Chapter Summary and Project Overview

This chapter has recounted my personal journey of curiosity, interest and professional growth towards learning about the Reggio Emilia approach. Beginning attempts at implementing several of the principles of this approach within my own professional context have been successful to date. I am encouraged by the deeper and more personalized learning I have observed with the students in my own classroom.

The focus of this project is to research and evaluate the academic literature on the relationship between the principles of Reggio-inspired learning and the development of learner competencies. The core competencies of the redesigned British Columbia curriculum will be addressed specifically: Thinking (Critical and Creative), Communication and Personal and Social Competencies. The tenets of a Reggio-inspired approach will be examined in ways they can significantly contribute to facilitating the learner competencies. Connections will be made to
how the development of these competencies through a Reggio-inspired approach will support personalized learning. The literature review will also look at the relationship of the learning environment to the development of learner competencies and components within that environment which facilitate communication, collaboration and creative and critical thinking. Finally, the literature review examines educator experiences of implementing a learner-centered focus within mandated curriculum.

Chapter 4 will examine ways in which an innovative Reggio-inspired learning environment can support the development of these specific competencies. I describe a digital resource I created, which outlines professional resources for the key components of a Reggio-inspired innovation space, reflective of the literature reviewed in chapter 2 and what I have learned while developing my project. Support for educators to more fully understand and practice a Reggio-inspired approach within a provincially mandated redesigned curriculum will be provided through this digital resource.
Chapter 2: Literature Review

This literature review will consider whether or not the social constructivist underpinnings of the Reggio Emilia approach shows promise for developing learner competencies. The following questions are considered:

1. What are the major principles of a Reggio-inspired approach for implementing the redesigned curriculum?
2. What learner competencies are reflected in a Reggio-inspired approach from a constructivist stance?
3. What are the experiences of educators with learner-centered constructivist pedagogy in Reggio Emilia contexts?
4. How can the learning environment contribute to the development of learner competencies?

Redesigned Curriculum for 21st Century Learners

Rapid shifts in technological advances in the 21st century are affecting how learners search and access information. At a recent Summit on the Teaching Profession in Banff, Alberta, BC Minister of Education, Peter Fassbender led a delegation of education partner groups to consider what is needed to create responsive 21st century schools (Cardwell, 2015, p. 7). The areas of leadership, collaboration, innovation and a climate of high expectations of students were identified as priorities for successful and sustainable learning outcomes in Canadian contexts (Cardwell, 2015, p. 7). Recognizing that students need to be prepared to work and thrive in a rapidly changing economic, social, and technological society, the BC Ministry of Education outlined a plan to transform the curriculum and assessment in our current educational system. The transformation involves redesigning the curriculum to create a more flexible system that will
reflect the core competencies, skills, and knowledge that students will need to succeed now and in the future (British Columbia (BC) Ministry of Education, (MoE), 2015a). For educators, this means a shift from heavily prescribed content, skills and attitudes, outcomes, and achievement indicators in the current curriculum to competency development, process, concept-based learning, and interdisciplinary big ideas that are central to the newly drafted curriculum (BC MoE, 2012a).

Competencies

At the heart of the new curriculum are core competencies that are said to support lifelong learning. They are defined as “a set of intellectual, personal and social skills that all students need to develop in order to engage in deeper learning” (BC MoE, 2013c). The competencies are:

- Thinking (Critical and Creative)
- Communication
- Personal and Social (Positive Personal and Cultural Identity)

These competencies have been designed to reflect what “students are ‘doing’ in any area of learning” (BC MoE, 2013e). Students are driven by learning by thinking, collaborating, and communicating to solve problems, investigate issues, and make informed decisions (BC MoE, 2013e).

The focus on learner competencies is widespread in national and international education and the BC Ministry of Education has consulted key resources (Ananiadou & Claro, 2009; Hipkins, 2010; Jacobs, 2010) including research and frameworks to inform the work around the core competencies. In the current policy debate, international initiatives on essential 21st century skills and conceptual frameworks are contributing to the development of new teaching practice and educational reform (Alberta Education, 2013; OECD, 2009; Hipkins, 2010). The ever-
changing world where individuals apply their knowledge has contributed to the shift to competency-based education. Acedo and Hughes (2014) assert that as “21st century education must have considerable focus on mindful, sustainable behaviors that allow for a better world” (p. 506), competences imply more than skills.

**Personalized Learning**

As recently as January 2015, the BC Education Plan was updated with regards to its Transforming Curriculum and Assessment on-line materials to include a Focus on Learning document that outlined the goals of Personalized Learning for every student. The new document recognizes that students need to “be engaged and invested in their own learning” and that this learning should be “initiated, self-directed and interdisciplinary...facilitated and co-planned with teachers” (BC MoE, 2015a).

According to recent BC Education documents, personalized learning is based on the following principles of learning and teaching: 1) “Learning requires the active participation of the student, 2) People learn in a variety of ways and at different rates, 3) Learning is both an individual and a group process, and 4) Learning is most effective when students reflect on the process of learning” (Personalized Learning in BC: Interactive Discussion Guide, n.d., p. 10). The plan advocates for teachers to collaborate with students to develop and meet goals that are closely aligned with their strengths, interests, and passions.

The focus of education is currently more on the learner, rather than the content. While educational stakeholders “are looking into new solutions aimed at improving the quality of students’ learning,” curriculum is “viewed as the foundation of comprehensive educational reforms aimed at achieving quality learning outcomes” (UNESCO IBE 2013a, p. 1). Principles for personalized learning are designed to meet the needs of students in a changing landscape.
Traditional classroom instruction, based on a knowledge transmission model, is now being challenged by personalized learning. This transcends the school and implies new pedagogical strategies (Acedo & Hughes, 2014). Within the new paradigm, educational experiences are planned and carried out from a learning perspective. The emphasis is now on the learning actions and learning processes of the learner and how the learning can be optimized (Brown, 2006). In recent decades, the role of the teacher has shifted from teaching to learning facilitation and it can now be described as facilitated and supported inquiry. Some argue that “inquiry into authentic questions generated from student experiences is now the central strategy for teaching (Brown, 2006, p. 112).

**Comprehensive Vision for K-3 Pedagogy**

The Ministry has identified curricular changes that will support the needs of current learners. The goals and plans are currently being implemented and the Ministry acknowledges that on-going improvements and modifications will be made, as further feedback is gathered and education partners continue to define and shape their understanding (BC MoE, 2013c).

At the same time, the Ministry acknowledges that “education should lead to the development of the whole child” and that “schools must do more than help students master the sets of knowledge and skills acquired through the standard subject areas” (BC MoE, 2013c, p. 3). Therein lies the question of ‘how’ can teaching practice be supported with the advent of the curricular transformation. Acedo and Hughes (2014) draw on quantitative and qualitative academic research to support the need for a comprehensive vision for supporting curriculum “to avoid the fragmentation that results when theory and practice are developed separately” (p. 504).

A Reggio-inspired approach, based on the Reggio Emilia approach, is offered as a supportive pedagogy for curriculum transformation within the primary years curriculum.
The Reggio Emilia Approach

Highly regarded internationally and contributing significantly to a growing body of literature on high quality, progressive early childhood education, the Reggio Emilia approach continues to endure in evolving contexts (Dahlberg, Moss & Pence, 1999). Heralded in *Newsweek* (Kantrowitz & Wingert, 1991) as one of the best early childhood education models in the world over 25 years ago, educators and scholars continue to be inspired by the philosophical underpinnings and innovative practices within this approach (Bond, 2013). Explored extensively in North American contexts, “the approach is known for its intense vitality and research-based practice internationally” (Baker, 2015, p. 2).

The Reggio Emilia approach is not a formalized curriculum, a codified progression of steps, or a philosophy unto itself (Bond, 2013). It is not a formal model like Montessori or Waldorf and it lacks defined methods of specific steps for implementation, formal accreditation processes, and teacher or program regulatory standards (Edwards, 2002). Several philosophical foundations and ideas guide the Reggio Emilia approach, which may be interpreted in different ways to suit the needs of specific contexts and groups of children. The Reggio Emilia approach can be useful in providing “a set of guiding principles for learning that influence curriculum design,” which “are not only achievable but also desirable” (Acedo & Hughes, 2014, p. 506).

With the view that the Reggio Emilia approach is a contextual philosophical approach, several authors discuss ‘bringing Reggio home’ (Cadwell, 1997; Wurm, 2005) as being Reggio-inspired (Sisson, 2009). This project considers and uses the term ‘Reggio-inspired approach’ to convey an adaptation of the theory and principles which underlie the practice of the approach and to suggest how its principles may be incorporated into the context of the BC redesigned curriculum.
Principles of a Reggio-Inspired Approach

While the values, ideas, theory, and practice from Reggio Emilia have continued to inform the basic principles of the Reggio Emilia approach, the principles themselves have inspired present day educators to examine their own practice and allow for research and reflection in current contexts. The following principles do not fully capture the rich complexities of the Reggio Emilia approach, nor can they each be considered as separate elements. As in any connected and coherent philosophy “each point influences and is influenced by all the others” (Hendrick, 2004, p. 15):

- **The Image of the Child:** The child is seen as a protagonist, collaborator, researcher, and communicator; conceptualizing an image of the child as curious, capable, and full of potential and preparedness.

- **Children’s Relationships and Interactions within a System:** The child is conceptualized in relation to interconnected and reciprocal physical relationships (space, materials, environment-third teacher), social and emotional relationships (peers, adults, community), and intellectual relationships (learning, ideas, work and experiences).

- **The Role of Parents:** Parents are considered as the child’s first teacher; and partners in the child’s learning and education.

- **The Power of Documentation:** Documentation provides oral, written, and visual traces of children’s thinking, learning processes, and work experiences; opportunities for teachers as researchers; the examination of work from multiple perspectives; the informing of new pathways for further learning; the formative assessment of a child’s learning; and an intentional tool for reflection.
• **The Many Languages of Children:** Children are encouraged to create symbolic representations of their ideas and understandings, which recognizes the vehicle of art as a child’s initial way of expressing himself or herself; and provides materials, media, and experiences to represent and make visible their learning.

• **Emergent Curriculum/Progettazione:** This is not a pre-set curriculum but a process of inviting and sustaining learning; flexible planning for further investigation of ideas and devising ways to carry them out collaboratively.

• **Projects:** Projects provide the narrative and structure for children’s and teachers’ learning experiences, based on the strong conviction that: learning by doing is important and discussion in groups and revisiting ideas and experiences is essential to gain better understanding and to learn (Cadwell, 1997; Edwards & Gandini, 1998; Gandini in Stremmel & Hill, 2002; Hendrick, 2004; Fraser, 2012).

**Major Tenets of the Reggio-Inspired Approach and Connections to the Redesigned Curriculum**

The image of the child within a learner-centered focus.

The image of the child is fundamental to this approach and it is closely aligned with the learner-centered focus of the competencies and goals of personalized learning in the new curriculum. The view of the child as being capable and intelligent drives the pedagogy that celebrates diversity, uncertainty, and complexity, rather than seeing these elements as barriers to learning. Mesher and Amoriggi (2001) note that “complex, diverse and uncertain are words that accurately describe the world of the 21st century in which we are educating children” (p. 241). The BC MoE acknowledges that, in a world of growing challenge and diversity, education needs to be concerned with the “development of the whole child” (2013c, p. 3). The image of the child
is also the starting point in considering how a Reggio-inspired approach differs from other pedagogies. A Reggio-inspired approach relies on a vision of child-centered practice as it is “based upon sociocultural principles and emphasizes a learner-centered approach to teaching and learning” (Soler & Miller, 2003, p. 64). In her encounters with early childhood educators, Wexler notes that “a paradigm shift began with the image of the child as competent and capable of highly complex ideas and forms of communication through artistic materials” (2004, p. 13).

**The Relationship of Emergent Curriculum to Learner Competencies and Personalized Learning**

The notion of emergent curriculum is being recognized as a significant pedagogical approach to learning in the primary years. Emergent curriculum, which is constructivist in its approach and differing from traditional, linear and prescriptive approaches “requires teachers to listen to children’s ideas and interests and to connect their curriculum goals with those of the children in responsive and creative ways” (Cadwell, 1997, p. 69). The features that define emergent curriculum also support the goals of personalized learning. In turn, an emergent curriculum honors the needs, strengths and interests of children while facilitating the achievement of provincially mandated learning outcomes.

At the heart of the personalized approach to learning, the British Columbia (BC) Ministry of Education (MoE) has identified core competencies that they understand to transcend all areas of learning and all disciplines. The competencies are: communication, thinking, and personal/social (collaboration), which are also reflected in the current drafts of the redesigned curriculum, and are clearly evident in the learning outcomes. The intention is for students to develop and use these competencies when they are engaged in learning. The notion of ‘big ideas’ is introduced, and learning statements tend to be broad, abstract, and transferable and supportive of teachers making interdisciplinary connections (BC MoE, 2012a). The goal is to facilitate
deeper learning and engagement. This is a departure from the traditional curriculum where educators “have taken an aspect of the totality of complex, interconnected knowledge and reduced, isolated and even framed part of it into separate subjects for easier, more focused teaching” (Collins & Clarke, 2008, p. 1012). The goals and principles of emergent curriculum support these competencies and the key elements of the transformed curriculum in a way that invites personalized learning to occur organically.

Open-ended, child-directed and teacher-facilitated, emergent curriculum focuses on the process of learning and is built on the strengths of the student. Constructivist in its perspective and informed by the work of theorists Piaget (1936/1952), Vygotsky (1978), and Dewey (1997), the emergent curriculum model reflects the active engagement features embedded in the core competencies of personalized learning. It recognizes that children benefit from a curriculum where they can be engaged and involved and that learning happens when children have voice and choice, directing their own investigations and following their interests (Baldwin, Adams, & Kelly, 2009). The core of emergent curriculum honours the diversity of children’s intellectual interests, and as such, refutes the idea of a “single plan for a unit to be followed like a pathway, but a sense of multiple possibilities and multiple routes to knowing.” (Wien, 2008, p. 11). As with personalized learning, Collins and Clark (2008) note that the processes of emergent curriculum ensure that each child learns and expresses their learning in ways that reflect their strengths, styles, and preferences.

Emergent curriculum provides opportunities for collaboration, the personal/social competency, and a clearly identified 21st century skill (Acedo & Hughes, 2014). It supports the understanding that learning is social and is a group process and that knowledge and ideas can emerge from an interacting collective. From a complexity standpoint, the intelligence of the
group is greater than the intelligence of any one individual (Davis, 1996). Osberg and Biesta (2008) noted that curriculum itself is a ‘space of emergence’ and not a space of common ground and that “education only takes place where ‘otherness’ – being with others who are different from us – creates such a space” (p. 324). Wien (2008) examines the idea of reciprocity within this collaborative model. She views reciprocity as the mutual exchange of learning power between teachers and children and suggests that collaboration invites “more integrated participation and responsibility” (p. 7).

**Reggio-Inspired Pedagogical Documentation: Assessment for Learning**

In BC, changes to the provincial curriculum will require changes to assessment. Specifically, the BC Ed Plan (2013a) has addressed assessment within a personalized learning context and new plans state that a greater emphasis will be put on assessment for learning. The Ministry says that “assessment is ongoing and inseparable from the instructional, assessment and learning cycle” and that “as curriculum becomes more personalized, with reduced prescriptive content and more flexibility, assessment will follow accordingly” (BC MoE, 2013a, Guidelines, para. 1 and 2). In a Reggio-inspired approach, which has its foundations in constructivist learning, documentation is seen as an integral part of the learning and teaching process. It is considered both a product and a process that seeks to represent the learning, thinking, and working of children, in words and images. As such, documentation is assessment for and of learning.

Pedagogical documentation emerged from the educational practices of Reggio Emilia over the last few decades. Today, educators around the world are exploring the practice of documentation as a way to learn more about how students think and learn in classroom situations. Loris Malaguzzi, the founder of the Reggio Emilia schools, describes pedagogical
documentation as a visible trace that captures what children do and say during the learning process and during collaborative interactions. It is regarded as a tool for continuous reflection, while making the learning process visible to teachers, other children, parents, and members of the larger school community (Edwards, Gandini, & Forman, 1998). American educators from Harvard’s Project Zero described documentation as “focused on the ‘stuff’ of understanding” like ideas, hypotheses, theories, and experiments, etc., and the “relationship of experience, skill, knowledge, and insight – the cognitive processes in coming to know something” (Guidici, Rinaldi, & Krechevsky, 2001, p. 307).

Documentation can be used for assessment for learning, instead of other traditional assessment methods. The goal of assessment for learning, also referred to as formative assessment, is to “monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning” (Carnegie Mellon, 2014, p.1). Pedagogical documentation has been referred to as visible listening or the ‘pedagogy of listening’. It uses text, images, transcriptions, and digital media to make student learning visible and to create a record of reconstructing children’s learning paths and processes (Ontario MoE, 2012). Conventional assessment methods focus generally on the work of an individual and the outcomes, achievements, and measurement of improvement over time. In a Reggio-inspired approach, documentation focuses on the ways that individuals and groups interact and learn from each other. The approach is concerned with the actions of learning, teaching, thinking, and other ways of knowing (Guidici, Rinaldi, & Krechevsky, 2001).

Pedagogical documentation, from a personalized learning standpoint, plays a role “in seeing and understanding children as individuals rather than normalizing children against standardized measures” and then categorizing them (MacDonald, 2007, p. 233).
Pedagogical documentation supports the core competencies of communication, thinking, and personal and social development (collaboration), which are at the center of the redesign of curriculum and assessment in BC. In the classroom, children feel valued when their words and work processes are made visible. When other children and adults, such as parents, teachers or visitors, engage closely with documentation, it opens up new ways of engaging with children’s learning. Studying, revisiting, and interpreting documentation can lead to new ways of thinking, reflecting, and making connections. It invites multiple perspectives. Documentation plays an important role in developing metacognitive awareness, and it invites children to think about their own thinking. Furthermore, it invites them to communicate their thinking. At an age when it is developmentally challenging for a child to abstractly ‘reflect’ on their learning, the visibility of documentation can be instrumental in promoting a child’s self-awareness so they may recognize themselves as learners. In a Canadian study on documentation as formative assessment, MacDonald noted that “through documentation, the child’s attention can be drawn to significant examples of their thought processes” (2007, p. 234).

Among the many potential benefits of using pedagogical documentation as assessment for learning, the way in which it can inform curriculum planning is significant. Documentation reveals the children’s ideas, thinking, and interests, and their learning processes and products, information that can lead to improved learning outcomes. It sets the stage for data collection that can authentically support emergent curriculum. Documentation of shared understandings can propel curriculum in ways that are authentically responsive to the children’s needs and interests. The conversations that arise when educators review documentation allow them to further their “understanding of the concepts children are building, the theories they are constructing and the questions they are posing” (Fraser, 2012, p. 141).
Theoretical Framework

The principles of the Reggio Emilia approach were developed from the ideas and philosophies of significant theorists and scholars. Without a doubt, Loris Malaguzzi, a young Italian educator who spearheaded the building of a new school in Reggio Emilia, Italy directly after World War II, can be considered the driving force behind the creation and development of the Reggio Emilia approach. A constructivist at heart, Malaguzzi dedicated his life to establishing an innovative educational community, which Howard Gardner referred to as the most “seamless and symbiotic relationship between a school’s progressive philosophies and its practices” (Edwards & Gandini, 1998, p. xvi). The Reggio Emilia approach is rooted in a constructivist view of learning, which maintains that knowledge is constructed socially and that children learn best when the learning environment supports the knowledge construction process (Phillips, 1995). Malaguzzi’s work was influenced by Dewey, Piaget, and Vygotsky among other formidable thinkers and thus the philosophical underpinnings of the approach arose from these academics just as the development of the education system in North America had been influenced by them (Mesher & Amoriggi, 2001). In recent decades, Bruner and Gardner have been significant proponents and supporters of this approach to early childhood education.

Dewey’s notion of a learner-focused view of learning is evident in Malaguzzi’s vision. Malaguzzi, like Dewey, valued participation and interaction in the process of learning and the benefits of working through long-term projects. Seeing learning as a continuous reconstruction of experience, Dewey believed that children’s interests, play, and activities were starting points for learning, and in fact, were the seeds for growth of a school’s curriculum (Hendrick, 2004). Dewey’s philosophy that children are architects of their own learning is strongly evident in the values and practices of the Reggio Emilia approach (Dodd-Nufrio, 2011). Moreover, his view of
the child requiring active learning experiences of personal interest and involvement is aligned with the BC personalized learning documents. In keeping with Dewey’s philosophy, children can be seen as “architects of their own learning” (Dodd-Nufrio, 2011, p. 236). Educators in Reggio Emilia have extended Dewey’s belief in listening closely to children to help them articulate their ideas and seek direction in their learning (Fraser, 2012). Often, this is referred to as a pedagogy of listening (Clark, 2005).

Piaget offered much to the understanding of the nature of knowledge through his work in developmental psychology. Like Dewey, Piaget viewed education as reconstruction and proposed that children need to be involved in active methods, reconstructing their own experience using activities of personal interest to them (Hendrick, 2004). While Malaguzzi acknowledged the contribution of Piaget’s cognitive-developmental theory to the Reggio Emilia approach, he and other educators in Reggio Emilia contested Piaget’s view of a child constructing knowledge in isolation, away from the exchange of a social group and support of adults (Fraser, 2012).

Vygotsky’s social constructivist theory is situated in the premise that essentially human actions are social in basis and our thoughts, beliefs, values, and actions are shaped by our personal experiences and social encounters (Vygotsky, 1997). His view that learning is essentially a shared process between individual constructors of knowledge supports the Reggio-inspired practice of recognizing the competencies and capabilities of the child and allowing adult scaffolding to facilitate the child’s learning (Vygotsky, 1978).

The enduring theoretical and philosophical underpinning shared by these academics is the social constructivist theory. Schwandt (1994) indicated that the assumption of this theoretical approach is that “our understanding of the world is situated in our interactions and relationships
with other people” (p. 355). That knowledge is socially constructed and shaped by relationships, experience, and culture, is the “basic premise of the Reggio Emilia approach” (1994, p. 355). Social constructivism informs the principles and pedagogical practice embedded in the Reggio-inspired approach. Social constructivism has also been recognized as “one of the most influential theories of learning in the modern educational world” (Acedo & Hughes, 2014, p. 510). In this project, I continue to examine the literature to determine how the principles of a Reggio-inspired approach, from a social constructivist stance, supports the development of learner competencies.

**Learner Competencies Reflected from a Social Constructivist Stance**

**Collaboration and communication: Social relationships and constructing knowledge.**

In looking at alternative or traditional transmission models for teaching and learning, constructivist theory recognizes that knowledge resides in the learner and that learning is a social activity enhanced by reflection, metacognition, and inquiry (Teets & Starnes, 1996). Researchers Kim and Darling (2009) noted that social interaction plays a significant role in young children’s learning processes, specifically with regards to meaning-making and developing autonomy. In their qualitative case study, conducted in a Canadian context in a Reggio-inspired classroom, Kim and Darling examined how social interaction played a role in learning processes and how children construct their knowledge. In analyzing the children’s discourse in small groups, they reported “the children faced cognitive conflict while they were talking about the details of the Monet painting, but worked toward building common understandings” and that when relationships are the basis for pedagogy, the children “are capable of incorporating others’ strategies and solutions into their own thinking” (p. 139). Similarly, in a quasi-naturalistic study of preschool children in a university laboratory school, Swann (2008) looked at children in a
natural setting who were constructing relationship knowledge for a better understanding of constructivist education (p. 40). Based on the research of Devries (2004) and Piaget (1936/1952), Swann posited that in constructing relationships, children elaborate their knowledge and develop their intelligence. Using a quasi-naturalistic approach, exploratory actions initiated by children were observed and recorded for interpretation using the art medium. The learner competency of critical thinking was underscored when groups of children constructed progressively more complex understanding of relationships with materials by assimilating new experiences into their repertoire of schemas (p. 47). Connecting to the Reggio Emilia emphasis on learning as a group and social activity, Acedo and Hughes (2014) recognize that “students tend to learn best in groups where they can co-construct knowledge through dialogue, discussion and sharing” (p. 509). Cadwell’s (1997) extensive experience with the Reggio Emilia approach in Italy and the US suggests that “children’s participation in communicative processes is the foundation on which they build their understanding” (p. 62).

The socio-constructivist model promotes the Reggio Emilia image of the child “as a producer of knowledge and culture – the child is a knowledge maker” (Dodd-Nufrio, 2011, p. 236). This view of the child is built “on the premise that each child has the desire to connect with others, to engage in the learning, and to enter into a relationship with the environment (2011, p. 236). In their comparison of early childhood curricula, Soler and Miller (2003) noted that in the Reggio Emilia approach the child is viewed “as a powerful partner who ‘actively co-constructs’ the content of the curriculum with a more able ‘other’ (p. 66).

New (2007) notes the contribution of the relationship-centered dynamic of a Reggio – inspired approach for meeting the challenges of change and diversity in 21st century learning. She positions the powerful role of relationships as “supporting the risk-taking essential to
shifting paradigms… allowing children to veer away from a predetermined curriculum plan due to a new discovery of their own” (p. 10). The important aspect of relationships to learning offers a different vision of educators where they are “empowered to act as researchers” (Pacini-Ketchabaw et al., 2007, p. 7). New concurs that of all the contributions Reggio Emilia has offered to teachers, “the role of relationships embedded within the practice of collaborative inquiry has been the most profound” (2007, p. 11).

**Collaboration, Communication and Critical Thinking: Documentation as the Vehicle**

Kim and Darling (2009) discovered that documenting the learning and revisiting the documentation provides multiple versions of the children’s understandings and promoted collaboration and communication among children and their teachers. The authors noted that revisiting the documentation helped to develop the children’s metacognitive skills. In support of the competency of critical thinking, “the children were able to recall their previous activities and theories, and examine their own thinking and the thinking of others on the project” (p. 143). The significance of the study was reflected in how the children’s relationships within the socioconstructive context of layered understanding revealed collaboration in search of meaning. In developing a more critical approach to knowledge, Acedo and Hughes (2014) contend that “it is crucial for students to think back on what they have learnt, how they learnt it and what conclusions they can draw from the process” (p. 511). In their review of perspectives vital to 21st century curriculum, Acedo and Hughes indicate the importance of learning as a model of cognition, as a social activity, and as reflection. These components are also the hallmarks of a Reggio-inspired approach to documentation.

Also noting that communication and dialogue are key variables in constructivist learning, Daws’ (2005) narrative inquiry and action research into teachers and students as co-learners
illuminated that communication occurred most naturally in collaborative groups. The methodology of narrative journal analysis allowed Daws (2005) to reflect on using listening in his relational practice to optimize student communication and dialogue. His action research findings reflected that “children were more likely to express an authentic voice when their individual responses and interpretations were valued by the teacher and their fellow students, and scaffolded through questioning at various levels” (p. 110). In further analysis, Daws examined the Reggio practice of documentation as a tool for communication. In a constructivist setting, “educators can use documentation to explain children’s processes of learning; collecting, interpreting and displaying children’s understandings of their world using multiple modes of expression (p. 112). Accordingly, Fraser (2012) indicates that, as a record of learning experiences in the classroom, documentation reveals connections between events, and it provides children, parents, and teachers with an opportunity to review and plan future experiences (p. 141). From the perspective of personalized learning, Daws (2005) noted that, through his practice of documenting, he looked at “multiple ways of engaging [him]self in conversation about children’s learning and how educators can support children’s school goals – this is co-constructive community building” (p. 115).

Not to be confused with the common understanding of child observation, documentation supports pedagogy of listening in ways that transform teaching. The content reflects the knowledge co-constructed in concrete experience while the process involves reflection on the material to create meaning through interpretation (Curtis & Carter, 2000). Pacini-Ketchabaw et al. (2007) consider pedagogical documentation as a viable alternative to developmental and standardized assessments in supporting children’s learning. They believe “it offers a flexible
approach in which teachers make initial hypotheses about classroom activities but these are subject to modifications and changes of direction as the activities unfold” (p. 8).

**The Learning Environment and the Development of Learner Competencies**

Beyond the pedagogy of a Reggio-inspired approach, research supports the explicit relationship between learning environments, innovative teaching practices, and educational outcomes (Blackmore, Bateman, Loughlin, O’Mara & Aranda, 2011; OECD, 2009). Gibson’s theoretical notion of affordance is especially relevant to the learning environment. Gibson (1977) defined affordances as what the environment offers to people. With learners in mind, Dalgarno and Lee (2010) identified several learning affordances of creative and innovative environments, such as enhanced spatial knowledge representation, greater opportunities for experiential learning, increased engagement, and richer collaborative learning.

**Materials in the Environment**

Encounters between children and well-designed materials and tools can help individual and group knowledge processes develop. Rather than being taught rote concepts, children can work out rules and principles for themselves based on experiences (Piazza, 2007). In a Reggio-inspired approach, students are encouraged to use multiple forms of representation during knowledge construction, and they often do this through the language of material. Eckhoff and Spearman (2009) report that, through the “dynamic interaction of language, thought and objects,” understanding and knowledge can develop (p. 12). In this way, meaning-making and knowledge-building become processes of active co-construction. Further to the Reggio epistemology, Pitri (2006) argues that
knowledge is gradually constructed by individuals becoming each other’s students, by taking a reflective stance towards each other’s constructs, and by honoring the power of each other’s initial perspective for negotiating a better understanding of the subject matter (p. 43).

When students can explore materials in open-ended ways, they are able to progressively construct more complex relationships. Working and playing with others, they can assimilate and re-organize new experiences and understandings into their current repertoire of schemes (Vygotsky, 1978).

While materials offer diverse opportunities for developing creative competencies, the creativity, in turn, supports collaboration. As Rinaldi notes, creativity is not just the thinking of an individual but it is also “an interactive, social project” (Green et al., 2009, p. 376). Working with an extensive collection of materials yields an exchange of the teaching and learning process. Children discover that their classmates have new and interesting methods and ideas that are worth paying attention to and that, in fact, contribute to their own ideas and interests. The interaction promotes and extends thinking within the group and by individuals (Drew & Rankin, 2004).

Current reports from the field of neuroscience support the use of the Reggio-inspired practice of working extensively with materials. Lewis-Benham’s (2010) work illustrates that when introduced with intentionality and within the context of a reciprocal relationship, children’s sensorial interactions with materials can build connections in the brain (as cited in Liddle, 2010). Research on intelligence suggests that one of the keys is the recognition and creation of relationships and patterns during the early childhood years (Drew & Rankin, 2004). Gardner (1982) proposed that children must spend a lot of time with materials, before they can attain
representational abilities. He posits that children need to understand how their actions and bits of knowledge will contribute to future symbolic meaning.

Guerrera and Zuccoli (2012) noted that children’s projects, when supported and developed over a long period, lead to “a reflection about the relationship between function, form, and aesthetics as well as the chance to design a new creative or functional object” (p. 725). Swann also observed that when children have more time to explore the physical properties of different materials, they have more opportunities to become familiar with capacities and affordances of media (2008). Weisman Topal, co-author of the book Beautiful Stuff, pointed out that when children are given materials to explore without really having the chance or time to explore and understand them, the materials do not become part of their world (Topal & Gandini, 1999).

Creative Technologies.

The recent interest in tinkering, the maker movement and design thinking, has been connected to the constructivist underpinnings of the Reggio Emilia approach. Papert has long been involved in creating unique learning environments based on constructionism (Papert & Harel, 1991). While constructivists believe that the child’s active engagement with others and the environment in exploring and investigating, produces new knowledge and skills, Papert’s constructionism perspective views learning as an active process where knowledge is constructed through doing and making (Stager, 2013). The commonality lies in enabling students to become involved in gaining and constructing knowledge by interacting with physical materials. When conceptualizing a 21st century student-centered learning environment, the ubiquitous technologies must be considered; they not only allow for more physical, active
engagement but they also convey experiences that are beyond those imagined in the physical world (Green et al., 2009).

The idea of Makerspaces was introduced as innovative learning environments that support constructionist views; that is, learners build knowledge through doing and making. Such creative technology environments provide space, tools, technology, and equipment to support invention and tinkering, and promote interdisciplinary thinking and learning. A Maker culture is a conceptual framework that shares values emphasizing collaborative, playful, iterative, student-directed exploration. By making tangible objects, students can actively create with purpose, learn by doing, and solve personally relevant problems (Martinez & Stager, 2013; Stager, 2015). The Maker movement is strongly aligned with the underlying principles of a Reggio-inspired approach and is conducive to rich, inquiry-based, self-directed learning. The concept aims to build literacies in science, mathematics, design, technology, engineering, and art, while reflecting an interdisciplinary approach to learning.

Giannakos and Jaccheri (2013) revealed that digital artifacts can make “abstract and symbolic manipulations involved in creative procedures more concrete and manageable” (p. 104). Artifacts and materials that allow children to iteratively test a construct and deconstruct their designs and creations when working collaboratively ultimately enhance the learning process. Helm and Katz (2000) encourage educators to regard children as young investigators, and as such, children will continue to look for and use tools that are available to them in their environment to help answer questions, solve problems, and make new connections. As an almost magical extension of their play, children’s inventions can be printed, programmed, or animated with interactivity (Martinez & Stager, 2013).
Educator Experiences of Constructivist Pedagogy in Reggio Emilia Contexts

**Mandated curriculum: Child-centered vs subject-centered learning.**

The literature was also reviewed to examine educators’ understandings and experiences in regards to having the child at the center of the learning, rather than the subject at the center, in constructivist Reggio settings. In a 2010 action research study conducted over nine months, Maynard and Chicken (2010) supported teachers in their use of the Reggio approach as a catalyst to gain greater understanding of their own professional practice. Specifically, from a series of interviews, recorded observations, and a framework devised to support the analysis of observations and field notes, child-led learning was explored, as opposed to learning through prescribed subject-related outcomes. Although the participants received professional development seminars during the study, to broaden their understanding of constructivist and Reggio practices, the authors found that moving away from a ‘subject-centered’ approach within the context of a mandated curriculum was challenging for teachers. A professional conflict between the teachers’ intentions and actions occurred when “teachers found it challenging to support children in following their own interests and exploring their own theories when these were deemed to be ‘inaccurate’” (p. 35).

In questioning what a classroom based on constructivist pedagogy looks like at the primary level, Dangel, Guyton, and McIntyre (2003) saw several learner competencies within the constructs of their study. Their qualitative study, designed to understand the experiences in classrooms guided by constructivist theory, involved collecting data from classroom observations, formal interviews, and surveys of teacher beliefs. The analysis of the data revealed broader elements of constructivist classrooms and commonalities such as: the important role of children, authentic and purposeful interactions among classroom participants, and engagement in
academic activities (p. 243). Their findings, which are consistent with the idea that “respectful relationships, purposeful communication, intellectual engagement and shared ownership have relevance for all learning,” also have important implications for teachers when designing learning environments (p. 244). Brooks and Brooks (1999) also suggested that a constructivist paradigm is less concerned with the subjects themselves, and more concerned with the ways in which learners are engaged. The authors present a comparison chart showing the differences between traditional classrooms and constructivist classrooms, which is aligned with the findings of Dangel, Guyton, and McIntyre (2003, p. 16).

**Educator Perceptions of Learner Competencies**

In examining the perceptions and concerns of educators who are already involved with conceptualizing change in early childhood teacher education programs using the Reggio Emilia approach, Elliott (2005) conducted a national study using a descriptive cross-sectional qualitative methodology. The research questions examined the most significant change factors and patterns expressed by university faculty, laboratory school staff, and graduate students in using the Reggio Emilia approach. The most prominent finding was the consistent collaboration. Elliot indicated that in the process of change “collaboration was determined to be a true finding” and that “one of the hallmarks of the Reggio Emilia Approach is collaborative activity” (p. 161). Studying the processes teachers use to construct their knowledge and processes they use to guide children in their construction of knowledge has significant implications for teacher education. Furthermore, it confirms a tenet of the Reggio Emilia approach, which is the role of teacher as researcher (Edwards, Gandini, & Forman, 1998).

Similarly, Edwards’ (2005) investigated how educators understand the theory of constructivism within the context of the Reggio Emilia approach in relation to informing early
childhood curriculum, and found a significant relationship between constructivism and documentation. The author conducted a qualitative study within a post-positivist paradigm, with the aim to collect data from tape-recorded and transcribed interviews of educator participants who were recruited through case sampling. The data was analyzed using principles of grounded theory, coded, and defined by a series of subthemes. From a Reggio perspective, constructivism “was considered to hold a social dimension and to refer to the art of documenting children’s learning” (p. 76). The author speculated that knowledge construction involved a social process and that the documentation made “the learning itself visible to adults and children so that adults could also understand what and how children were learning” (p. 77). The documentation positioned both the child and the educator as being actively involved in the construction of knowledge.

**Literature Review: Gaps and Limitations**

Several limitations became apparent within the literature review. In the study by Dangel et al. (2004), although one of the strengths was the conversational partnerships where the participants felt comfortable talking to the researchers openly and in depth, further, prolonged and continued engagement with teachers in their classrooms was recommended. In several articles, the participant sample sizes were quite small. In Edwards’ (2005) study, even though the findings were based on a larger study with 14 educators, her report was only focused on four educators. In Swann’s (2008) study, the number of subjects was small to ensure a depth of familiarity with the teacher/researchers, but the results were not generalizable to other situations. Furthermore, in Swann’s study, more than 80% of the participants were from low-income families, which may have affected the prior familiarity and experience of children with materials used during the observations. Daws’ (2005) narrative inquiry could have involved self-reporting
inaccuracies and bias, especially since he stated an interest and commitment with the Reggio approach prior to his analysis. In addition, the pedagogical experience of educators in the studies by Edwards (2005) and Maynard and Chicken (2010) were significantly different. One group, for instance, taught under a mandated curriculum in the form of a Welsh Foundation Phrase Framework, while the other group taught within an individual curriculum developed by educators in Australia, making them unsuitable for direct comparison. Some of the gaps in the literature included a lack of Canadian research, little research in primary-aged classrooms, and no studies examining the development of 21st century competencies within Reggio-inspired contexts.

**Professional Perspective**

The literature search revealed a number of articles dedicated to constructivist approaches in preschool settings within Reggio Emilia contexts. The literature search also uncovered a few studies of Reggio Emilia constructivist primary classrooms, an area in need of future research. In the articles that were reviewed, the socio-constructivist principles at the root of the Reggio Emilia approach suggest that knowledge is co-constructed competently by children, with teacher interactions through communication, reflection, and analysis of learning. Multiple instances of negotiated learning, meaning-making, collaboration, and relationships surfaced in the research articles. The literature also pointed to considerable cross-over of the three elements being investigated (constructivist theory, Reggio Emilia principles, and 21st century learner competencies). This is encouraging as it supports the Reggio Emilia approach as an innovative pedagogy for primary classrooms in BC while the new curriculum is being rolled out for teachers. In addition, though not indicated in this literature review, the Reggio Emilia approach, with its constructivist underpinnings, draws from the ideas and theories of many great thinkers.
such as Dewey, Piaget, Vygotsky, and Bruner. Thus, the approach is more than just an eclectic mixture of ideas, but it has merit from its origins, showing how 21st century learner competencies can be supported and developed cohesively with a pedagogical framework.

The literature also points to challenges that may arise with change. While many teachers are ideologically and philosophically committed to teaching practices that put the child at the center of their learning, they still feel significantly restrained by having to follow standards and outcomes through more direct, transmissive models of teaching (Edwards, 2005; Maynard & Chicken, 2010). Although teachers report a commitment to child-centered values, they are clearly aware that the activities they create and the pedagogical approaches they implement are not consistent with these values (Elliott, 2005; Edwards, 2005). A lingering sense of comfort still pervades about using prescriptive frameworks, rather than adopting descriptive frameworks of learning.

Many researchers have discussed the processes of learning and the significance of relationships, evident in constructivist approaches. Innovative, emergent curriculum models, such as the one that is embedded in the Reggio Emilia approach, can reflect active engagement features that are in the core competencies of personalized learning. This model recognizes that children benefit from a curriculum where they are engaged in the learning, which occurs when children have voice and choice, and can direct their own investigations or follow their interests (Baldwin, Adams, & Kelly, 2009). The relationship between the learning environment and educational outcomes was supported in the literature (Blackmore, Bateman, Loughlin, O’Mara & Aranda, 2011). Children’s encounters with materials, tools and technologies were found to facilitate the development of the core learning competencies (Eckhoff & Spearman, 2009; Stager, 2013; and Swann, 2008). The literature points to the need for more work to be done in aligning
learner competencies within a pedagogical model to support the new BC curriculum. Moreover, significant professional development and curriculum support will be needed for teachers.

**Conclusion and Recommendations**

The literature review indicates some guiding questions for the ongoing research and exploration of the topic. Some additional questions that remain and inform my final project include:

1. What other foundational principles of a Reggio-inspired approach can support the development of learner competencies and personalized learning, as outlined in the new curriculum drafts?

2. In which specific ways can constructivist learning facilitate the development of each of the core competencies outlined in the new curriculum drafts?

3. In which specific ways can a Reggio-inspired learning environment inform and contribute to the development of learner competencies in the early years?

For 21st century learning, substantial changes are underway for the BC curriculum. Central to the success of these changes is teacher confidence for translating new curriculum guidelines. With significant support in place, the development of learner competencies and the goals of personalized learning through the pedagogical practice of a Reggio-inspired approach seem promising. Chapter 3 will connect the ideas found within the literature. The environment as the third teacher will be presented as one of the principles of a Reggio-inspired approach that will support and facilitate the development of the learner competencies and personalized learning. A conceptualized model of an innovation space for early learners is proposed and the
features of such a space are described, with accompanying resources, to support educators wishing to implement such a model.
Chapter 3: Professional Project

Background

School administrators and teachers across British Columbia are initiating conversations about interpreting and implementing many of the new features of the redesigned provincial curriculum, such as concept-based learning, big ideas and core competencies (British Columbia (BC) Ministry of Education (MoE), 2013b). At my own school, we have been exploring the structure of knowledge and the interplay between different levels of knowledge in ways that will lead to deeper learning for our Junior School kindergarten to grade 5 students. The shift to competency-based learning in our province has resulted from the knowledge-building focus in 21st century society. This has resulted in a paradigm shift in education and the curriculum redesign leading us to examine current practices about how children acquire knowledge and what they do with it. As core competencies are at the center of the redesign of curriculum and assessment, educators will be looking for resources to support the combined skills, processes and behaviors and habits of mind that learners use to make sense of the world.

Learning environments will need to be flexible to support these changes and the ways in which students learn and develop competencies (Blackmore, Bateman, Loughlin, O’Mara & Aranda, 2011; Organization for Economic Co-operation and Development [OECD], 2009). In considering my own practice, I have questioned how these learner competencies can be further developed and how a constructivist foundation and the principles of a Reggio-inspired approach might be a supportive pedagogy. A conceptual model of a shared Reggio-inspired innovation space for young learners can be considered to co-construct, collaborate, and communicate their learning within a supportive framework of materials, creative technologies, and documentation for these competencies. This will be a beginning step to reimagining a flexible learning
environment. Although such a model requires a significant philosophical and financial commitment, the need for it has been clearly outlined in the new British Columbia (BC) education plan. The idea of a Reggio-inspired shared space in a school, between several schools or within a school district would allow the opportunity for creating multiple resources, tools, and technologies to be used by groups of teachers and students to support innovative learning. Communities of educators would have opportunities to share and exchange professional knowledge about the interactive learning processes within the innovative environment and develop a new understanding of the global and systemic changes that are taking place in education.

In the previous literature review, I explored whether or not the principles of a Reggio-inspired approach could support the development of learner competencies in the redesigned curriculum. The research revealed significant evidence that the socio-constructivist principles at the root of the Reggio-Emilia approach propose that knowledge is co-constructed competently among children with teacher interaction through collaboration, communication, and critical and creative thinking (Dodd-Nufrio, 2011; Kim & Darling, 2009). The Reggio-inspired approach appears to be a supportive, pedagogical framework for developing cross-curricular competencies, which include “those proficiencies and habits of mind that learners employ to make sense of the world as they inquire, solve problems, make decisions, and take stands on issues” (BC MoE, 2013f, para. 8). These intellectual, personal, social and emotional proficiencies are embedded in the Reggio-inspired approach, which allows for greater flexibility and personalization of learning, for deeper, life-long learning.
A Reggio-Inspired Innovation Space: Linking Pedagogy and Space

The conceptualized model for a Reggio-inspired innovation space has several components that are central to developing competencies and deepening the learning of young students. Foundational components for the creation of a Reggio-inspired innovation space include materials, creative technologies and pedagogical documentation. The model encompasses the image of the child as a curious, competent learner, capable of building understanding and co-constructing knowledge. This tenet connects to the learner-centered focus of the new curriculum. The conceptualized model reflects Reggio’s constructivist view of learning, which encourages all children to investigate their environment to the fullest (Edwards, Gandini, & Forman, 1998). This model and its key components are aligned with 21st century competency development and curriculum design, and are flexible to evolve with advances in technology (Dalgarno & Lee, 2010). It is designed to be adopted by a school, a school district, or an independent educational facility and can be extended with teaching-learning connections to a university faculty of education, museum, or in partnerships with industry.

This chapter will present three key components of a Reggio-inspired innovative learning space for early learners which will provide opportunities for the development of the learner competencies. These components are materials (Piazza, 2007; Eckhoff & Spearman, 2009; Drew & Rankin, 2004), creative technologies (Papert & Harel, 1991; Green et al., 2009; Martinez & Stager, 2013) and pedagogical documentation (Kim & Darling, 2009; Acedo & Hughes, 2014; Daws, 2005). I have created a digital resource guide for educators to access in beginning to explore these three components, whether for their own classroom innovation space or for a conceptualized model for a shared innovation space within a school or school district. The digital resource guide will provide links to curriculum documents that describe profiles of each of the
competencies. Each of the key components will be described with resources provided for teachers that include professional literature, links to relevant websites, professional blogs and associations, project and inquiry investigations and lists of materials and supplies. The rationale for the shared innovation space is outlined, as well as how the principles and practices of a Reggio-inspired approach within this space will contribute significantly to the development of competencies and improved learner outcomes for young students.

Rationale for a Shared Innovation Space

“Look at your learning space with 21st century eyes: Does it work for what we know about learning today, or just for what we know about learning in the past?”

– Sir Ken Robinson, CBS, 2012

A redesigned curriculum developed for 21st century skills and fueled by innovation and new knowledge must keep abreast with platforms that allow learners to explore that curriculum (Jacobs, 2010). Without imagining new possibilities, the transformed curriculum and assessment practices will continue to be limited by the structures that contain our collective practices and “those structures become the proverbial ‘box’” (Jacobs, 2010, para. 4). This is especially true as we consider shifts in curriculum design, rapidly changing technology, and the move towards personalized learning. The BC Ministry of Education recognizes these changes and describes the need to create new learning environments for students that allow them to discover, embrace, and fulfill their passions (BC MoE, 2015a). An “invitation to innovate” has been issued to schools and districts to encourage their support of personalized learning (BC MoE, 2012a, p. 10). I embrace this invitation in conceptualizing how an environment beyond the four walls of a classroom might develop and inspire not only the competencies identified by the Ministry of Education but creativity, inventiveness, motivation and engagement.
In presenting a conceptualized model for an innovation space, I look to one of the tenets of the Reggio-inspired approach, the environment as the third teacher. In a Reggio-inspired approach, the environment is the essential piece for creating educational experiences that foster inquiry and investigation in a social, collaborative context. The physical environment where children learn is central to promoting creativity and imagination and is itself a teacher within the creative process (Edwards, Gandini & Forman, 1998; Green et al., 2009). The creation of a collaborative, interdisciplinary, material, and technology-rich space to improve student learning by developing innovative processes and practices is not only possible but vital. The attention to space, its impact on learning, and how it informs practice has been extensively studied in recent years (Blackmore, Bateman, Loughlin, O’Mara & Aranda, 2011). According to Strong-Willis and Ellis (2007), the attention is crucial because of its close relation to how children interact with the world and environment and it “supports autonomy, social affiliation and creative exploration and expression” (p. 45). By situating a re-imagined space in the context of Reggio-inspired principles, underpinned by social-constructivist theory, the goals of the transformed BC curriculum can be realized.

**Experience in Professional Practice**

In my professional practice, I have successfully aligned the provincial curriculum with learning outcomes through a Reggio-inspired pedagogical model. The principles lend themselves well to supporting curriculum planning, assessment, and relationships with children and parents, and have contributed to my understanding of the learning processes of young children. Clearly, my classroom environment is a significant educational contributor to my students’ learning. Space, materials, form, and function all influence the learning processes in the classroom and I have devoted much time to setting up the environment and developing ways to invite and
LEARNER COMPETENCIES AND REGGIO-INSPIRED PEDAGOGY

provoke learning. I concur with teachers in Reggio Emilia who maximize the environment’s potential for children to acquire the skills and understanding for successfully participating in their learning communities (New, 2007).

At the same time, I have also encountered obstacles and limitations to creating an optimal learning environment in the classroom, mainly due to the confines of space and the lack of materials, resources, and technology. Such limitations often arise when I explore the possibilities for collaborative inquiry, design thinking, long-term investigations, and the creative use of technologies. It is often not possible to have adequate space for investigative work that involves print media, technology and physical materials at the same time. In interdisciplinary settings, there needs to be multiple ways of accessing information and representing knowledge. Projects frequently have to be cleared away or constructions disassembled in order to provide table space for in-class eating or subject specialty teachers who must adhere to an inflexible timetable. Clearing away work with no space or time to allow for deeper learning through revisiting or problem-solving collaboratively with peers limits rich, complex opportunities for further learning. Other educators may face similar challenges in their educational contexts. Although I try to create the conditions for these possibilities as best I can in my own classroom, I believe that flexible, collaborative, resource-rich learning environments can be used to promote deep, sustained, and engaged learning in young children.

To enable innovation, the BC Ministry of Education (2012a) refers to some of the limitations: “it is clear that an education system redesigned with 21st century priorities in mind must remove the barriers that limit teachers’ ability to innovate and personalize learning based on students’ needs and the community context” (BC MoE, 2012a, p. 2). A fixed classroom space can be rearranged in endless ways, even though the materials may be present in limited quantities
and capacities because of the physical space and storage. Still, having only small groups of students access available technology, tools, and materials causes difficulties for authentic collaborative inquiry. The issue of time as a constraint becomes apparent when representations of learning must be cleared away to allow for other experiences embedded into an inflexible school timetable. Often, deep, sustained and engaged learning is interrupted or brought to a halt before there are adequate opportunities to document the learning. Furthermore, in my own experience, a lack of flexible classroom space often prevents opportunities for students to keep their work in a permanent space for revisiting and working on to invoke in-depth, self-directed learning and emergent projects.

**Key Components of a Reggio-inspired Innovation Space**

**Materials**

“In any environment, both the degree of inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kind of variables in it.”

– Simon Nicholson, 1971

Fundamental to my work as a teacher researcher, materials and their endless sensorial, imaginative, and creative properties provide my students a wide range of learning opportunities. Natural materials, found materials, and ‘loose parts’ have naturally supported student inquiries and investigations, lent themselves to questioning and problem-solving, and sustained student engagement over long periods (Kim & Darling, 2009; Swann, 2008). With no predetermined, specific characteristic use, materials allow for a wide range of interpretational possibilities. These possibilities support young students in using creative thinking and generating new information and connections between objects, ideas, and thoughts (Eckhoff & Spearman, 2009).
In my own teaching practice, I have observed that allowing children to work, design, and solve problems with materials over longer periods of time results in more complex representations.

In the digital resource for educators, four categories of materials have been presented (see Figure 1) and include references to supportive pedagogical research and approaches. (see Appendix A for introduction to resource and Appendices B-F for digital resource screenshots of the materials section).

<table>
<thead>
<tr>
<th>Loose Parts</th>
<th>Theory of Simon Nicholson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Found Objects</td>
<td>Beautiful Stuff Project</td>
</tr>
<tr>
<td></td>
<td>David and Frances Hawkins: “Messing About” and “Cultivating the Scientist in Every Child”</td>
</tr>
<tr>
<td>Reclaimed and Recycled Materials</td>
<td>REMIDA</td>
</tr>
<tr>
<td>Natural Materials</td>
<td>Andy Goldsworthy and Eco Art</td>
</tr>
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<td></td>
<td>Eco Art</td>
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</tbody>
</table>

*Figure 1. Categories of materials in digital resource. This figure outlines how materials and their supportive resources will be presented.*

Each of these categories includes titles for professional reading, photographs of related materials, project and inquiry suggestions, and links to websites and blogs with supporting resources. As well, I have included a selection of children’s books (see Appendix C for list) which educators can use in a number of ways to support innovative practices including introducing concepts and ideas, providing starting points for dialogue, connecting experiences with new information, exploring topics of interest and sparking curiosity, inquiry and creativity.

**Creative Technologies**

“Our task, regarding creativity, is to help children climb their own mountains, as high as possible. No one can do more.”

– Loris Malaguzzi, 1998, p. 77

Within the Reggio-inspired approach the environment is considered the third educator, helping to develop social and communicative skills and imaginative and creative dispositions.
that are central to the future success of students. One of the greatest challenges facing education today is preparing students for “the globalization of a digitized workforce,” which “requires an intensive focus on advanced skills such as innovation, creativity, and design” (Green et al., 2009, p. 375). In consideration of aligning the strengths of a Reggio-inspired philosophy with the needs of students as learners in the complex information world, creating opportunities for the digital and physical worlds to come together to maximize creative learning processes is important.

From observing students at work and play in my own practice each day, their natural inclination towards learning is by doing and making, as Papert posited (Papert & Harel, 1991). Given the opportunities and resources, children naturally tinker, engineer, invent, design, and create. Just as children construct knowledge with physical materials, direct experience with digital and technological tools and materials can further their abilities in problem-solving, inquiry investigations, and project-based learning (Green et al., 2009). As children unfold their learning, technology can be a significant aid to their problem solving, especially in the case of the youngest students. Martinez and Stager (2013) have written extensively about how, by making tangible objects and constructing, children can actively create with purpose, learn by doing, and solve personally relevant problems.

In the creative technologies section of the digital resource, educators are provided with the following resources: professional books, technology materials and sources, examples for project-based learning, and links to educational websites and learning resources (see Appendices G and H for digital resource screenshots of creative technologies).

**Pedagogical Documentation**

Some of the most significant findings from the literature review were the multiple ways in which documentation served to develop learner competencies and personalize learning (Kim&
Darling, 2009; MacDonald, 2007; Daws, 2005). In considering a conceptual model for an innovative learning space, the practice of pedagogical documentation will facilitate deeper learning, one of the goals of the redesigned curriculum. The ability of technology to document and present learning and the adequate space to display the competencies, skills, interests, and learning strategies of students is essential to fully understand the teaching-learning process in an innovative environment.

Kim and Darling (2009) discovered that revisiting the documentation of learning not only provides multiple versions of student understanding, but promotes collaboration and communication between students and their teachers. This contribution of documentation to develop students’ metacognitive skills supports Acedo and Hughes’ (2014) views that children need to reflect on what they learn and how they learnt it. As Daws (2005) noted, communication occurs most naturally in collaborative groups, and documentation is a considerable tool in giving children a voice.

Pedagogical documentation is used increasingly in early childhood classrooms for assessment of learning (CBS, 2012). Fraser (2012) concurs with Earl and Hannay (2011) that by engaging in pedagogical documentation, “teachers are becoming innovators in their own right” (CBS, 2012, p. 1). In considering how assessment can be aligned with changes in curriculum, documentation, through the interpretation of images and words, can create “shifts away from traditional teaching approaches” (Turner & Wilson, 2010, p. 5). The presentation of documentation in a shared learning space can promote the value of collaborative inquiry. Curtis and Carter (2000) note that teachers can also collectively reflect on and analyze evidence of learning that deepens the understanding and co-constructed knowledge in developing professional practice.
Fully embedding visible documentation into the culture of a shared innovative learning space would contribute to the learner-centered focus of personalized learning (Daws, 2005). Documentation can increase both the teachers’ knowledge of the learning process and the students’ learning styles, affinities, interests, and strengths. Turner and Wilson (2010) propose that documentation becomes an approach for knowing a child and making the child visible. Thus, it develops the teacher’s relationship with the learner. Documentation also makes it possible for parents to be engaged in their child’s learning, another goal of personalized learning. The process of collecting, interpreting, and reflecting allows students and parents to co-construct the meaning of the student’s experience.

The digital resource for educators provides information on making thinking and learning visible. This information includes professional books, documentation samples and tools, documentation templates and links to professional educator websites (see Appendices I and J for digital resource screenshots for pedagogical documentation. A paper document (see Appendix K) has also been prepared for educators looking to explore the practice of documentation more fully. The screenshots are representative of the information uploaded on the digital resource to date. The resource will continue to be amended as time proceeds.

Conclusion

A review of the literature on how a Reggio-inspired pedagogy can facilitate the development of learner competencies has numerous implications for teachers. In the next two years, teachers in British Columbia will be examining the shifts and changes in curriculum and assessment in their own practice. As the core competencies are communication, critical and creative thinking and personal and social competency, it follows that it is necessary to create innovative learning environments where these competencies can be developed, observed, and
assessed. The key components of such a collaborative learning space, materials and creative technologies, are the elements within the environment which are fertile ground for the development of the competencies. Furthermore, these elements promote the skills and learning processes of inquiry, problem-solving, and higher order thinking in interdisciplinary contexts, which have been identified as success factors for life-long learning (BC MoE, 2013f). The third component, pedagogical documentation, is essential as it is the practice of observing, recording, interpreting, and sharing the processes of the learning that will deepen educators’ understanding of the competencies. The digital resource is offered to provide easily accessible professional information to educators as they consider creating and implementing a Reggio-inspired innovation space for their own context.
Chapter 4: Reflections

While taking my Masters of Education degree, I have been able to consolidate my views as both a teacher and a learner. As my learning is ongoing, I consider this experience to be the start of my new journey. I recall a plaque in the hallway of the first school I worked at which quoted Plato’s words that ‘the beginning is the best part of the work’. I believe these words are true for my M. Ed work. The courses, projects, readings, and professional conversations have afforded me a greater depth of knowledge for my work as an educator. In this chapter, I reflect on my professional thinking that has either changed or been reaffirmed during my M.Ed. program. I also consider new possibilities for my future professional career and make key recommendations for other educators who may be interested in this capstone topic.

Professional Thinking

My professional thinking has changed significantly in regards to the importance of theory behind practice. I had always been aware of a “theoretical” level but did not embody it into practice. Through the M.Ed. program, I have been exposed to an incredible amount of scholarly literature on diverse topics in education. I developed a new appreciation for the source of information and the rigor with which research is conducted. In the last several years, I have been doing most of my professional learning through books and social media, and professional development opportunities. I realize that I rely on social media like Twitter, Facebook, blogs, and websites to inform my professional practice. Clearly, these sources are immensely informative and have great value in their range of information. They do, however, lack the value of academic literature which is research-based. I have had many opportunities to collaborate with members of the professional learning communities who share many of my beliefs and values about education and learning. My thinking has changed; however, in that instead of simply
exploring information, I need to think more critically about it. Just as we ask our students to do, I must also critically evaluate information and arguments about topics like technology, and recognize the patterns and connections to develop a more meaningful understanding before applying it to practice. Some of the information I have gained from social media, I admit, has become diluted by the deluge of data. While having some value, much of it is unsupported by evidence, or even theory.

My change in thinking has reinforced my need to be more skeptical before making decisions about the curriculum and professional practice in the classroom. From my studies of the Reggio-inspired approach, I need to remind myself that the question is often more important than the answer. I need to take an inquiry stance when examining decisions and choices, and unpacking the complex issues of practice. Using “If… then…” statements can be a good start when I explore my beliefs about teaching and learning. In this way, I can begin building an innovative practice by merging current best practice with new research.

In my professional thinking, I am convinced that a Reggio-inspired approach and the supporting principles have enormous potential for creating pathways to success for students. Although the Reggio Emilia approach has sustained educational contributions for more than 50 years, it has been misinterpreted and glorified in ways that have caused some to suspect it is only a passing trend in education. After researching the approach extensively, I feel more strongly than ever that it is a supportive pedagogy for the ongoing changes in education. With the image of the child at the heart of the approach and with its many connections to principle, the Reggio-inspired approach may serve as a compass in the ever-changing and uncertain future of learning.

Far from being a trend, the Reggio Emilia approach is highly progressive and innovative, as it was at the time of its formation and as it continues today. In some ways, it was an early
vision for personalized learning, as it builds on the passions, interests, and strengths of children, makes learning and thinking visible, promotes voice and choice for children, designs self-directed learning experiences for engagement, collaboration, and communication, considers parents and the community as partners in learning. As a teacher for over 25 years, I am aware of how the principles for the approach connect in multiple ways, to support the different ways in which children learn.

An overarching feature of the Reggio Emilia approach is the development and value placed on creativity. As a primary competency, creativity has new significance in this age of information, technology, and new media. Rinaldi (2006), one of the great Reggio educators, emphasizes that the intention of children to ask questions and search for answers is the genesis of creativity. Malaguzzi (1998) has also indicated that creativity should not be a separate skill but a characteristic of how we think, know, and choose. From my literature review, the Reggio-inspired approach supports all of the core competencies of the new BC curriculum. I remain heartened by the possibilities this approach holds for our students and their future.

Professional Work

In considering how I will apply what I have gained from my graduate experience to my professional career, I have specifically reflected on three areas where I grew as a learner and a professional educator. They are: the learner perspective, professional competencies, and professional knowledge.

For me, pursuing an M.Ed. degree, especially after being out of school for over 30 years, has been a humbling experience. I have assumed the perspective of a learner and discovered firsthand the meaning of being self-directed and taking responsibility for one’s own learning. In the program, I would need to use my prior knowledge and the knowledge of others to co-
construct an understanding of the subject matter. For the first time in a long while, I was receiving feedback designed to provoke my thinking and elicit more questions. Failure and risk-taking are usually unpleasant experiences but I had much to learn. I was fully aware of the need to seek out appropriate resources to find solutions. My new experience as a learner was likely to have the greatest impact on my ongoing work as a classroom teacher.

My graduate experience has also given me many opportunities to develop competencies. From working with my fellow students on projects, collaborative inquiries, and professional discussions, I have been able to develop skills for collaboration, critical thinking, and communication, enhancing my personal and social responsibility. The reading and writing assignments and interactions with professors have helped my competencies for reflecting and critical thinking. Through discussions about professional knowledge in oral and written forms and in different contexts and formats, my abilities to be critical, creative, and innovative have been stretched. The competencies will serve me well in my professional development and in professional relationships with colleagues, parents, and administrators in the school community.

My studies have significantly contributed to my professional knowledge as I have acquired a deeper understanding of pedagogy and educational perspectives, both current and historical. I also have a better understanding of the new BC curriculum after researching the competencies and personalized learning. Furthermore, I have a greater knowledge of the Reggio Emilia approach and its adaptation to Reggio-inspired practice around the world. From my study of constructivist learning, I now have a better understanding of learning theory, which will be especially relevant as I incorporate the new curriculum into my own practice.

My graduate experience will be particularly valuable in my current position as a kindergarten teacher, and in my conversations with parents and in presenting information during
evening events. I feel I have a much better understanding of evidence-based practice and can articulate the main views of the new curriculum and early learning, a Reggio-inspired approach. My knowledge will be beneficial in supporting the admissions team and the administrative team in articulating the vision for our Junior School.

I also hope to share my knowledge professionally with other educators through professional development. Such opportunities are embedded in my work when presenting my research to colleagues who wish to implement a Reggio-inspired approach in their own classrooms. I hope to connect with the Canadian Association of Independent Schools to establish an online network of educators who are interested in exploring the Reggio-inspired approach in their own schools. For instance, I have contacted Beverly Smith at the Centre for Early Childhood Research and Policy at the University of Victoria, to discuss the dissemination of information on how the Reggio-inspired approach can develop cross-curricular competencies at the 2016 K-3 Institute.

Finally, my goal is to continue exploring the development of a Reggio-inspired innovation space at my school and elsewhere. I envision a shared innovation space that has connections to pedagogical research at the University of Victoria and partnerships with industry that can leverage expertise and resources. The beginning is the best part of the work and I look forward to the journey ahead.

Key Recommendations for Educators

1. **Know the curriculum:** We all understand the importance of really knowing our students. As the provincial curriculum is being redesigned, we have a great opportunity to embrace the new curriculum and assessment, and re-evaluate our practice by exploring innovative ways to support our students.
2. **Engage in collaborative inquiry**: Ensuring student success and reaching every student is a goal that is more complex than it might seem. Working with colleagues and professional learning communities, we have an opportunity to develop a perspective to co-construct our understanding and expertise to create best practice and resources.

3. **Explore a Reggio-inspired approach**: Take steps to investigate the principles underlying the approach. Begin with one principle, such as the environment as the third teacher – and attempt to deconstruct it for yourself. Find your own place in the continuum of practice in terms of the Reggio approach and its principles, and use it authentically in your own context.
References


Guidici, C., Rinaldi, C., & Krechevsky, M. (2001). Making learning visible. Reggio Emilia, Italy: Reggio Children srl Clayton Schools Family Center, St. Louis, MO University of Vermont Child Development Center, Burlington, VT.


Appendix A. Creating Innovative Learning Spaces: Resources for Primary Teachers

Creating Innovative Learning Spaces
Resources for Primary Teachers

Developing Learning Competencies: Critical and Creative Thinking, Communication, and Collaboration

Innovative learning environments have much to contribute to the development of learner competencies. Research supports the explicit relationship between learning environments, innovative teaching practices and educational outcomes. **Three key components** of an innovative early learning space designed to promote and make visible the competencies of children are Materials, Creative Technologies and Pedagogical Documentation.

Core Competencies | Transforming Curriculum & Assessment

MATERIALS
Appendix B. Materials

MATERIALS

"In any environment, both the degree of inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kind of variables in it."
Simon Nicholson, 1971

Materials, and their endless sensorial, representative and creative possibilities, present children with a range of learning opportunities. Loose parts, natural materials, found and reclaimed materials naturally support student inquiries and investigations, lend themselves to questioning and problem-solving, and sustain student engagement over long periods of time. Possibilities with materials support young children in using creative thinking and constructing new understandings and connections between objects, thoughts and ideas.

Children’s Books for Provocation of Play, Interest and Creativity with Materials

Add a title
Click to add description
Add a title
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Add a title
Click to add description
Appendix C. Children’s Books for Provocation of Ideas, Interest and Projects
Appendix D. Loose Parts

LOOSE PARTS
In the early seventies, architect Simon Nicholson developed the Theory of Loose Parts. His ideas were that loose parts, materials which can be moved around, taken apart and put back together in new ways, combined, designed and redesigned, and tinkered with, create infinitely greater opportunities for creative engagement than fixed materials and environments. The materials have no specific set of directions to be used and promote opportunities for choice and self-directed learning and exploration.

Resources for Teachers

List of Materials and Questions for educators
This book contains a wonderful list of materials that can be added to the environment and several good questions educators can ask themselves about collections of materials.

<table>
<thead>
<tr>
<th>Table 9.2 Material Possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPURPOSED</td>
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<tr>
<td>Straws</td>
</tr>
<tr>
<td>Clothespins &amp; fasteners</td>
</tr>
<tr>
<td>Rulers</td>
</tr>
<tr>
<td>Wood</td>
</tr>
<tr>
<td>Corks &amp; straws</td>
</tr>
<tr>
<td>Pegboard</td>
</tr>
<tr>
<td>Wire</td>
</tr>
<tr>
<td>Flashlights</td>
</tr>
<tr>
<td>LED lights</td>
</tr>
<tr>
<td>Squirt bottles</td>
</tr>
<tr>
<td>Sees</td>
</tr>
<tr>
<td>Bottles &amp; jars</td>
</tr>
<tr>
<td>Batteries</td>
</tr>
<tr>
<td>Styrofoam</td>
</tr>
</tbody>
</table>

Source: Based on Table 8.2 from Playing and Learning in Early Childhood Education, by Shehz, p. 246. Copyright 2011 by Pearson Canada.
Appendix E. The Beautiful Stuff Project

The Beautiful Stuff Project

Beautiful Stuff!: Learning with Found Materials

Beautiful Stuff! is an excellent book which documents the learning and teaching process of children investigating found materials. Its Reggio-inspired focus presents a project approach and intentional plan for using found objects in primary classrooms. It explores children’s deep involvement in deciding and directing their own learning and profiles many examples of critical and creative thinking, communication and collaboration.

(Beautiful Stuff! Learning with Found Materials, Cathy Weisman Topol and Lella Gandini, 1999, Davis Publications.)

Project Ideas for Beautiful Stuff Inquiry Unit

- Collecting in the classroom....
- Individual Beautiful Stuff Creation with Plan
- Sharing Beautiful Stuff Creations at Student-led Conferences
Appendix F. The Relationship Between Materials and Learning

The Relationship Between Materials and Learning

"The materials we choose to bring into our classrooms reveal the choices we have made about knowledge and what we think is important to know. How children are invited to use the materials indicates the role they shall have in their learning. Materials are the text of early childhood classrooms. Unlike books filled with facts and printed with words, materials are more like outlines. They offer openings and pathways by and through which children may enter the world of knowledge. Materials become the tools with which children give form to and express their understanding of the world and the meanings they have constructed."

Appendix G: Creative Technologies

CREATIVE TECHNOLOGIES

Given the opportunities and resources, children naturally tinker, engineer, invent, design, and create. Just as children construct knowledge with physical materials, direct experience with digital and technological tools and materials can further their abilities in problem-solving, inquiry investigations, and project-based learning. As children unfold their learning, technology can be a significant aid to their problem solving, especially in the case of the youngest students.

Making and Maker Spaces

Martinez and Stager (2013) have written extensively about how, by making tangible objects and constructing, children can actively create with purpose, learn by doing, and solve personally relevant problems.

(Invent to Learn: Making, Tinkering and Engineering in the Classroom. Sylvia Libow Martinez and Gary Stager, 2013)

GUIDE TO CREATING AND INVENTING WITH TECHNOLOGY IN THE CLASSROOM
GUIDE TO CREATING AND INVENTING WITH TECHNOLOGY IN THE CLASSROOM

DESIGNING A SCHOOL MAKER SPACE
Appendix I: Pedagogical Documentation: Making Children’s Thinking and Learning Visible

PEDAGOGICAL DOCUMENTATION

Making Children’s Thinking and Learning Visible

Pedagogical documentation is used increasingly in early childhood classrooms for assessment of and for learning. In considering how assessment can be aligned with changes in curriculum, documentation, through the interpretation of images and words, makes children’s learning and thinking visible. The presentation of documentation in a shared learning space can promote the value of collaborative inquiry. Teachers can collectively reflect on and analyze evidence of learning that deepens the understanding and co-constructed knowledge in developing professional practice.
Appendix J: Pedagogical Documentation Links and Professional Resource

LOOKING AT ASSESSMENT AND LEARNING IN NEW WAYS
LEARNING TO DOCUMENT IN REGGIO-INSPIRED EDUCATION

Pedagogical Documentation in early Childhood

Pedagogical Documentation in Early Childhood is an inspiring step-by-step guide to documenting children’s ideas, questions, play, and learning in a way that enhances teachers’ thinking and understanding at the same time. This book supports teachers on their journey to tell the stories behind children’s work and inquiry.

(Pedagogical documentation in early Childhood: Sharing Children’s Learning and Teacher’s Thinking, Susan Stacey, 2015.)
Appendix K: Reggio-Inspired Documentation Handout

Documentation: Making Children’s Learning and Thinking Visible

“It’s not what you look at that matters, it’s what you see.”
~Henry David Thoreau

What is documentation?

Documentation is a process which seeks to reveal, understand and make visible the learning of children.

Overarching features of documentation:

- Documentation involves a specific question that guides a process.
- Documentation involves collectively analyzing, interpreting, and evaluating individual and group observations; it is strengthened by perspectives.
- Documentation makes use of multiple languages (different ways of representing and expressing thinking and learning in various media).
- Documentation is shared, inviting a response from students, teachers, parents and the learning community.
- Documentation is not only retrospective, it is also prospective. It shapes the design of future contexts for learning.

The Process

- **Observation**: Observe children’s learning and thinking processes and gather evidence of what has been observed and heard.
- **Reflection**: Share observations from different perspectives to build a 3-D picture of what is happening.
- **Analysis**: Develop an understanding of what underlying themes, questions or misconceptions are emerging.
- **Possibilities and provocations**: Use the information and insights to support the children’s learning; how can their research and interests be further developed?
- **Visibility**: Display the above to share the learning process, the students’ developing understanding and the work of the children.
“To document means to leave interpretable traces...which are able to make visible the children’s learning processes and ways of constructing knowledge”. (Lella Gandini)

Helpful Resources


Useful Websites
http://www.mlvpz.org/documentation/index.html
http://www.edu.gov.on.ca/childcare/document.html

Apps for Documenting Learning