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Abstract

This qualitative study, carried out in an early learning center in an international school in Japan, aims to examine the place, meaning, and practice of assessment of young children’s learning through the methodology of documentation as defined and developed by the educators of the Reggio Emilia Approach. Whereas most aspects of instruction and assessment practices focus on individual performances and achievements, this study looks at the learning strategies of young children within the group and the learning of the group and the complexities of assessment practices assigned to socio-cultural theory. The focus of this study, therefore, is framed within socio-cultural theory to look at the intersection of the two, that of group learning and documentation, where the systematic and purposeful documentation of the ways in which groups develop ideas, theories and understanding is given space as being critical to learning of individuals as well as of groups towards building an understanding of assessment from a socio-cultural perspective. Learning is viewed as relevant to experience where the relations between the social and personal (cultural) are shared and that each person learns autonomously and through the ways of learning of others.

The study was carried out in the form of action research in the course of one academic year, with the researcher acting as an active participant observer to a group of 4 children and a teacher who formed a learning group through a yearlong project on the concept of color. The teacher was asked to document the process of the salient paths of learning of the children through the project, becoming the ‘documentor’ of the project, and the researcher ‘documenting the documentor’.
The main findings suggest to view learning of young children as a web of reciprocal expectations and possibilities of engagement built upon children’s constant mediation between scientific and everyday concepts with and through others.
Chapter 1

Introduction

A Framing Narrative: an overview of the study

This research study explores the meaning, place and practice of assessment in early childhood education, through a pilot study which includes all staff in an early learning center of an international school in Japan providing context to focus on a case study of one teacher and four children in a year long project on the concept of color. Rather than viewing learning and development of young children as being primarily about individual achievement, this qualitative inquiry interprets the educational experiences of a group of students and a teacher from a socio-cultural perspective, and views the learning and development of young children, as distributed over, stretched across people, places and things (Perkins, 1993; Salomon, 1993), where school, as a place of education, is seen as a ‘community of learners’ (Brown et al., 1993; Rogoff, 1990; Wenger, 1998). The approach to assessment derives from socio-cultural theories, and from the Reggio Emilia Approach, exploring the method of documentation as defined by the educators of the municipal schools of Reggio Emilia. The study inquires into two key questions: firstly, how can the method of documentation foster new ways of learning for both the child and adult?; and secondly, what is the relationship between documentation and assessment as practice from a socio-cultural perspective?

This introductory chapter will initially discuss three contexts pertaining to this study: firstly, the early years education context with a brief discussion of the goals and purposes of early childhood education; secondly, the international school context including the history and development of the early learning center; and thirdly, the Reggio Emilia context. Finally, I
introduce the theoretical framework used for the study and identify three key concepts used pertaining to the research questions: groups, documentation and assessment.

**Early childhood education context**

Early childhood education embraces a variety of group care and education programs for young children and parents. The traditional focus on day care, nursery school and kindergarten programs has expanded to include attention to the needs of infants and school-aged children in primary grades, and generally, early childhood education encompasses programs designed for children in the 2 to 8 age range.

The field of early childhood education has a long and rich history of observing and describing the development of young children (Scott-Little, Kagan, and Frelow, 2003). Seminal works by theorists such as Froebel (1782-1852), Pestalozzi (1746-1827), and Piaget (1896-1980) articulated stages of development and described typical or expected trajectories of development. Over the last 30 years, there has been increased attention given to early childhood education and care services based on varying reasons ranging from demand for more institutions with the rise in women joining the work force, to the recognition of the importance of early learning based on brain research, and to protecting children deemed at risk (Dahlberg, Moss, and Pence, 1999). Despite these varying voices attributed to interest in early childhood education, the authors recognize a similarity in the use of language of early childhood: promoting development; ensuring readiness to learn and readiness for school; enhancing school performance; early intervention for children deemed to be in need, at risk or otherwise disadvantaged; developmentally appropriate practice and desirable outcomes;
models and programs; plans and cost effectiveness; regulation, standards; the language of quality (p. 1).

Moreover, recently, there has been a shift from the theoretical descriptions of how development should unfold to more explicit articulations of what is expected of children’s development, assessing what children should know, be like, and be able to do before they enter kindergarten, for example, the publication in 1999 of the Early Learning Goals by DfEE (Department for Education and Employment) in England defining what each child should understand, know and be able to do at the end of the Foundation Stage at age 5 (Smidt, 2002) (See Appendix 1).

The goals and purposes of early childhood education may broadly and holistically be addressed in four major domains of development as: 1) social/emotional/personal well-being; 2) physical; 3) cognitive; and 4) aesthetic. Rather than outlining and addressing the goals and purposes of early childhood education within these domains in a technical and managerial way to ensure standardization, predictability and control, I like to participate in an open dialogue of the goals and purposes of early childhood education by locating the relationship between documentation and assessment as a way to ask how we might understand the child, childhood, knowledge and learning to explore the thinking within the dominant language of early childhood education presented thus far.
International school context: Descriptive history of the early learning center of the school in context

The international school in the context of this research was founded in 1924 by members of the foreign community in Yokohama to serve the educational needs of expatriate children using English as the medium of instruction. Initially, the school would fall into the category of ‘overseas schools serving the expatriate community of a particular nation’, namely, the United Kingdom. The preschool section of the school, then called Kindergarten, which composed of children from ages 3 to 4, was established in the 1950’s. The curriculum in its early stages of development followed a British system, whereby children who were 5 entered first grade, suiting the needs of a predominantly British community. With a revision in age requirement, and the shift of the school to serving students of several nationalities, the school created a Primary Preparatory section in the Kindergarten for 5 year olds with an academic program which included reading and writing. In 1990 a purpose built building for Kindergarten, consisting of four classes for children from ages 3-5 was built – one nursery (3 year olds), one transition (4 year olds) and two primary preparatory classes (5 year olds), all classes under the umbrella of ‘Kindergarten’.

The current Early Learning Center (ELC hereafter) was formed in the fall of 1998 when an increase in enrollment in the elementary section of the school ‘forced’ the 3 and 4 year old classes to separate from Kindergarten due to space and moved into borrowed facilities off the main campus. Since then, the 5 year old class alone has come to be called ‘Kindergarten’ and joined the elementary department of the school. Ironically, although this decision was not initially well received by the staff of the early years, this move to the borrowed facility for
the 3 and 4 year old classes, in actual fact, instigated a ‘move’ on two levels – physical and conceptual: physically, the isolated facility offered the flexibility of time and space, such as in the use of the playground, without needing to conform to the schedule of the rest of the school. This physical freedom offered a program where a schedule more in tune to the rhythm of the children was developed; and conceptually, with this flexibility and freedom of time and space, the ways in which the teachers organized and planned their interactions and time with the children differed accordingly, such as by not being bound to a fixed time for outdoor recess, this offered situations that enabled unpressured time to the teachers and children for both inside and outside experiences. Furthermore, as the ELC became an isolated entity by physical location, there was a necessity for the teachers to work closely and openly to establish a positive internal support system.

This was also the year the school embarked upon the Primary Years Program, the international curricular framework constructed under the guidance of the International Baccalaureate Organization, where a traditional curriculum of a thematic approach moved to an inquiry-concept driven approach. During the two years of residing in the borrowed facility, a closer look at the preschool program was encouraged by the headmaster. The translation, adaptation and implementation of the Reggio Emilia experience in the ELC within the curricular framework of the Primary Years Program became realized in the fall of 2000 with the construction of a new building for this department.

**The Reggio Emilia Approach context as a philosophy**

Reggio Emilia is the name of a city in northern Italy in the province of Emilia Romagna. The
city has a population of about 150,000 people, a prosperous, industrial, and progressive city, embedded in history, which has become over the last few years, ethnically diverse creating ‘a new Reggio’ (Piccinini, 2004). Under the term ‘Reggio Approach schools’, there are 13 infant toddler centers (ages of children from 6 months to 3 years) and 21 preschools (ages of children from 3-6 years), each with distinct names of its own, names such as the ‘Diana school’ and ‘La Villetta school’ being the most well known. These schools come under the direction of the municipal government of the city of Reggio Emilia either directly or through agreements with cooperatives.

Since World War II, the city of Reggio Emilia has had a socialist municipal government. Reggio is a unique body of theory and practice, basing its philosophy on a ‘sociocultural perspective’ (Fraser and Gestwicki 2000), which calls for a high level of community participation and emphasis on collaboration and working among children, teachers, families and the community, thus produced from a very particular historical, cultural and political context. Therefore, the philosophy of the Reggio Emilia Approach is grounded in the belief that education needs to be based upon building relationships – child-child, child-teacher, teacher-teacher, teacher-parent, and emphasizes the collaboration of all these relationships as important to develop respect for each other (Rinaldi, 1999).

Loris Malaguzzi, founder and the first pedagogical director of the Reggio Approach, drew on a number of constructivist and social constructivist theories, listing some 25 names, such as Piaget, Dewey, Vygotsky, Erikson, Peirce, Freire, to name a few, as sources of inspiration (Edwards et. al., 1998). One reason for Reggio Emilia’s vigor and longevity rests in the Reggio educators (hereby referring to the teachers who work in the Reggio Approach
schools) continuing to be open and to reflect on theories and concepts from many different fields, not only in education, but also including philosophy, architecture, science, literature, and visual communication. In the 1970’s, the Reggio educators were inspired from Piaget’s thinking, especially Piaget’s terminology and view that the aim of teaching is to provide conditions for learning. However, the Reggio educators disagree with Piaget’s view of the child as egocentric, who constructs knowledge in isolation from the social group. This perspective opened the Reggio educators to the insights of the Russian psychologist Lev Vygotsky for example, the importance he attached to the relationship between thought and language, and how action is mediated by cultural tools and symbols. The inspiration from Dewey (1938) includes the view that learning is an active process and not a transmission of pre-packaged knowledge.

The Reggio educators have been inspired from theories and theorists but have not been bound by them. Rather they have used them to construct their own perspectives, for example, if Vygotsky and other semiotic thinkers have stressed the verbal and oral language, the Reggio Emilia Approach has widened the idea of language into what they have called ‘the hundred languages of children’ (see Appendix 2), introducing many new tools as semiotic mediators such as videos, digital cameras and computers. The Reggio Emilia Approach is not a method or a model that can be taught, but rather ‘it is a way of thinking about children, schools, education, and life’ (Rinaldi, 1997).

The philosophy of the Reggio Emilia Approach is not a commercial one as an exportable product. Rather, the philosophy offers a sense of belonging and a standing provocation to those who look for different values and ways of thinking to those we find around us. The
Reggio Emilia Approach, I believe, makes room for people to dialogue and enables people to enter a learning process of co-constructing their own knowledge, values and identity.

**Overview of theoretical approach**

In this research enquiry I attempt to examine the meaning, place, and practice of assessment of young children’s learning by viewing and documenting the individual learning strategies within a group and the learning of the group. The words at the heart of this research enquiry – groups, documentation and assessment – have the risk to be imagined and understood so differently even within dominant western cultures, that I am faced with the challenge to begin, first of all, to write this chapter with an aim to establish a common basis of mutual understanding related to these words.

The group, in the context of this research study does not refer to a random cluster of people in the same room or building but rather, signifies an intentional composition of 4 children and a teacher, and therefore includes an adult as a member of the group. This specific group of participants will eventually come to be called the ‘learning group’.

Documentation, in relation to assessment, may frequently be understood as perhaps ‘marks in a record book’ or may be thought of in more elaborate terms, however often becoming something for which there is no time. In this research enquiry, documentation is conceived of as both a product and a process that seeks to represent in words and images the working, playing and learning of young children, stemming from the experiences of the educators from the municipal schools of Reggio Emilia. Documentation is seen as an inextricable element in
the effective functioning of a learning group.

The practice of assessment is most often thought of as synonymous with evaluation, and evaluation is often a process of judgment, measuring or placing one work in relation to other works. Assessments have been dominated by the practice of giving tests in varying forms from quizzes to essays, to standardized tests, to determine whether how much the children have learned (or memorized). Assessment, in this research context, distinguishes itself from evaluation and views assessment as processes for coming to understand many and varied aspects of ways of learning and teaching.

Groups

When we conceive of the adults’ main domains of knowledge, much of learning occurs in group settings such as in business enterprises, science labs or art ensembles. However, most aspects of instruction and assessment practices of children in schools do not often focus on group learning or group situations, but rather, focus on individual performance and achievement. This research study looks at the meaning of assessment through the learning which occurs between the children and teachers as a result of the relationship which is built during the process of knowledge construction, a perspective grounded in the theory of Lev Vygotsky (1896-1934) that to understand human cognition, learning needs to be conceived as social and cultural, rather than as individual phenomena (Vygotsky, 1986).

The definition of ‘groups’ in this research is termed as a ‘learning group’, as it is defined by the educators of the Reggio Emilia Approach, to mean “a collection of persons emotionally,
intellectually, and aesthetically engaged in solving problems, creating products, and making meaning – an assemblage in which each person learns autonomously and through the ways of learning of others” (Rinaldi, 2001, p.16). I believe there are positive aspects of group learning which can be highlighted, but I am also made aware through my readings from the Reggio educators that at the same time, group learning has the risk to conceive of group ideology, contrary to well intended aims, to consider all of the children as the same or capable of working on a common task in the same way. The ‘learning group’ which I write of in this research context incorporates a degree of intentionality of who is in the group and why it has come together with an understanding to appreciate the similarities and differences in their thinking and ideas.

The purpose for the learning group to come together to investigate and to study a particular phenomena (in this research enquiry, that of color) offers an integral part in the identity of the ‘group’. This purpose offers a mutuality that need not imply that all members of the group have exactly the same interests or ideas. Situating the meaning of assessment within the concept of a learning group, I conceive of one of the most widely recognized and well-known ideas associated with Vygotsky’s scientific production of the term zone of proximal development (ZPD). I will further discuss this idea in the literature review.

Working in a group, I believe each member has the possibility to develop particular roles or areas of expertise which come to be acknowledged and accepted by the group, which from my limited experience is often accompanied with an atmosphere of joy as it is a shared experience, whereby the children may be thought of as belonging to the community of learners, where children may learn from each other and play multiple roles within the
community, including the roles of “actor and audience” (Brown and Campione, 1994)

As Carlina Rinaldi (2001) writes:

“Knowing how to work in a group – appreciating its inherent qualities and value, and understanding the dynamics, the complexity, and the benefits involved – constitutes a level of awareness that is indispensable for those who want to participate, at both the personal and professional levels, in effecting change and building the future.” (p.29)

From a socio-cultural perspective, assessment practices need to recognize the importance of understanding the individual as participating in social relations and cultural activities with others and the world, both as actor and audience. This research enquiry, therefore, bases groups as a powerful context for learning and places this belief as an important issue in terms of pedagogical research on the concept of assessment by viewing the learning of a group of individuals taking roles, responsibilities, and a sense of purpose in the social environment of the classroom.

**Documentation**

The concept of documentation, as developed by the educators of the Reggio Emilia Approach, is used for its value as a tool for recalling, that is, as a possibility for reflection, more so than as a collection of documents used for demonstrating the truth of a fact or for confirmation, where the reading and recalling of memory takes place after the fact. Documentation in this sense, offers a didactic itinerary which assumes the full meaning for the subjects involved, which include the children and teachers. Through this type of documentation as data related to the activities, which makes use of the verbal, graphic and documentary instruments as well as audiovisual technologies, documentation allows the educational path of learning of both
the children and adults to be more visible. Documentation in this sense acts as an integral part of the procedures aimed at fostering learning, and for modifying the learning-teaching relationship.

As a goal, the choice to document or the practice of documentation is not based on random acts, but rather characterizes and brings to life the daily experiences of the children and teachers as ways to construct the meaning of school as a place that plays an active role in the children’s search for meaning and our own search for meaning which has the possibility to become shared meanings.

The documentation process may be seen to have a spiraling effect within the cycle of inquiry by a) framing questions, then b) observing, recording, and collecting artifacts, c) organizing the observations and artifacts, d) analyzing and interpreting the observations and artifacts to e) building theories, f) reframing the questions to g) plan, project and respond, bringing one back to the cycle of framing questions again.

Any theorization, from the simplest to the most refined, I believe, needs to be expressed and communicated, and thus to be listened to, and therefore, embedded in the concept of documentation is the pedagogy of listening. In our daily interactions with the children, we endeavor to listen to the many ‘languages’, symbols, and codes they use to express themselves and communicate, listening not to produce answers, but rather to formulate questions. I believe it is easy to find wrong answers; but to ask relevant questions to call my attention to things that lead me to valuable insights is difficult, requiring rigor and patience.
Children are able to move from one ‘language’ to another, modifying and enriching their theories through many layers and levels of both verbal and non-verbal expressions. I am able to witness such situations from my daily experience of observing and working with the children, such as observing the ways two children paint together, and listening to the conversations that are exchanged between the children: “you’ve been working on that painting for a long time, how many days do you think it will take?” “Oh, maybe 5 days…” “I’m going to say bye-bye to all the white spaces…”, to which the partner also imitates this style of painting. And thus, I believe their theories are more enhanced if they have the possibility to make these shifts in a group context with others, and if they have the possibility to listen and be listened to, to express their varying opinions and to also be receptive to the varying differences of others. In this way, the Reggio educators conceptualize documentation as visible listening, (Rinaldi, 2001) documentation as the construction of traces through transcriptions, notes, photos, videos, etc. that not only testify to the paths and processes of learning of the children, but also make them possible because they are visible for recalling and reflection. The act of such ‘visible listening’ ensures that the group and each individual have the possibility to observe themselves.

Assessment

In trying to explore an understanding and the meaning of assessment, this research study is framed within a qualitative study in methodological terms and social constructionist in theoretical commitment, as a way to give value and meaning to research on the activities of human beings and paying passionate attention to what makes a person. I understand the meaning of regulatory assessment to serve the purpose of monitoring schools and keeping
track of and maintaining standards. Therefore, tests, designed primarily to assess the skill level achievements of children, seem to play a central role in education of what is believed to be the most important sphere of society.

I believe the value questions of the role research can play is to inquire about educational opportunities and widening horizons for children, and not about the measurable achievements of the recipients. Rather than applying abstract and decontextualized forms of assessment, I would like to articulate my stance on the role that educational research can play in emphasizing its role in contextualized practice, of what is going on in childhood institutions in their particular contexts, adopting what Cherryholmes (1988) defines as ‘critical pragmatism’ rather than ‘vulgar pragmatism’.

“Vulgar pragmatism holds that a conception is to be tested by its practical effects...what is true and valued is what works in terms of what exists. Vulgar pragmatism tests ideas and practices by comparing them to traditional and conventional norms with little or no sense of crisis or criticism...critical pragmatism continually involved making epistemological, ethical and aesthetic choices and translating them into discourse-practices. Criticisms and judgments about good and bad, beautiful and ugly and truth and falsity are made in the contexts of our communities and our attempts to build them anew. They are not decided by reference to universal norms that produce ‘definitive’ and ‘objective’ decisions.” (p. 178-9)

Working in close company of young children, I am always stunned by how children come to exemplify the values we [teachers] hold as their guide and co-constructors of meaning. We ask questions, and the children reflect our inclinations for inquiry by inherently framing a focus on basic human resources such as communication, listening and intellectual curiosity. I notice, for example, how our shared idea of “castles” holds the children’s attention longer on a particular day and their responses are formulated with a sense of audience and community. In the sandbox, a group of children talk about making a castle in the sand, a concept that one
child offered a couple of days before in a conversation held in the classroom. The concept “stuck”, if you will, and emerges in another space in the most uncontrived fashion, while the children are engaged in a shared and collective activity. In such instances, I revel quietly in the moment of communion. The meaning, place, and practice of assessment from a socio-cultural perspective then takes into account the growth of such shared identity, where we define who we are in terms of others with whom we have meaningful and sustained contacts based on questions rooted in our interactions.

**Summary of Chapter 1**

I believe the meaning of educational research in search for the meaning, place and practice of assessment from a socio-cultural perspective, is not to have immediate and determinate effects of structural integration on practice on a national level, but rather to emphasize the role of interpretation in social interaction, that of degree rather than of kind, perhaps leading to a plurality of perspectives with a hope to view and interpret the inner and inter activities of human beings. Rather than a focus on outcomes, achievements and measurement of improvement over time, assessment on the group and the ways in which individuals move, interact and contribute and learn from the ways of learning of others, the focus may perhaps be placed on the actions of teaching, learning, playing and thinking.

In this introductory chapter, I have opened a discussion for pursuing the meaning, place, and practice of assessment of young children from a socio-cultural perspective by looking at groups as a powerful context for learning, documentation as an element required in the functioning of a learning group, and assessment to mean a process to understand many and
varied aspects of ways of learning and teaching. This research enquiry, however, wishes not to solely focus on the learning group or documentation, but rather, attempts to investigate what happens at the intersection of the two as a way to explore the relationship between documentation and assessment. The theoretical work of Vygotsky (1987) and practical work derived from the pedagogy of the Reggio educators will hope to provide the theoretical and practical frameworks for this study.

Summary of the chapters

Chapter 2 of the literature review will provide the theoretical and practical frameworks to consider the two research questions in relation to the concepts of group learning, documentation and assessment. The literature review will consider the need to investigate epistemological beliefs on learning in regards to assessment practices; socio-cultural theories of learning; and explore the ways in which researchers from socio-cultural perspectives assess the learning of young children through various methods of observation, one of which the method of documentation as identified by the educators form the Reggio Emilia Approach will be explored in relation to the meaning of assessment. The methodology of action research in Chapter 3 is designed in this research study to presuppose a reflexive practice of the teachers in a pilot study as a necessary strategy to inquire into the nature of learning and to unpack our assumptions on the meaning, place, and practice of assessment from a socio-cultural perspective in order to inquire into the relationship between documentation and assessment. Chapter 4 presents the results of the pilot study to provide context for the strategy of reflexive practice enacted through a case study with one teacher working with four children on the concept of color for one school year. In Chapter 5, the data
collection of the case study is set out in a story format, following the documentation of a teacher as valued vantage points of people who work most closely with the children on a daily basis. The conclusion, in Chapter 6, will discuss the key findings of the ways in which documentation may foster new ways of learning, and how the relationship between documentation and assessment is conceptualized in terms of this learning through and with the teacher and children to contribute to the implications of developing socio-cultural approaches to assessment.
Chapter 2

Literature Review

A Framing Narrative

In February of 2000, I had the opportunity to participate in a study group to Reggio Emilia to observe and learn about the 13 infant toddler centers and 21 preschools run by the municipality in this Northern region of Italy with a delegation of over 150 educators from Australia. My intention was to join the delegation with an open mind, having little knowledge of the Reggio Emilia Approach. Little did I know what was to follow from this experience of 7 days.

A paradigm shift or ‘scientific revolution’ is explained to occur when the old paradigm is unable to deal with an outstanding problem (Kuhn, 1970). I experienced this paradigm shift from my experience in Reggio Emilia, the problem lying in how I viewed and understood the image of the young child to be after 14 years of teaching in a traditional curriculum. Tracing my roots to the beginning of my teaching career, I first began teaching in an ‘open classroom’ model in 1974, and with each moment I spent listening and interpreting the words of the Reggio Emilia educators, the excitement about learning and working with children was resurrected. With each day as my emotions evoked my thinking, I tried to synthesize how I was to bring back and share this paradigm shift with the rest of the staff waiting for me back in Japan. I knew at that moment what I needed to do was to explain and communicate in such a way where the staff could relate my words to their personal emotions, to make connections with the head and the heart, to listen with head and heart, in order to understand and interpret the world I experienced. I felt this need of connection between the emotional and intellectual
to be of paramount importance to be respectful, not only to my colleagues, but to the educators of Reggio Emilia as well.

I explained my 7 days experience in Reggio Emilia as if one would experience an invitation to take part in the art of Japanese tea ceremony. A Japanese tea house has an ambiance which is aesthetically soothing – sombre, soft colors of brown blending with the smell of incense, quiet rustling sounds of feet brushing along tatami mats over the soft sounds of water boiling in the tea kettle producing vapor so white. One appreciates the delicate flower carefully placed in an equally delicate wooden vase positioned under a scroll which reads the theme of the tea ceremony. We are invited to appreciate such sensitive acts of the master of tea ceremony to feel how the natural beauty of the outside world can become one with the inside and we are invited to watch the master of tea ceremony prepare tea, especially for us. Each motion the master makes, there is a purpose, whether it is to hold the ladle for putting the hot water into the tea vessel, or to put down the ladle, there is meaning in what the master performs. Of course, the product of savoring the tea is enjoyable, but one cannot appreciate tasting the tea without observing and participating in the process of how the master prepares the tea for us. The master of the tea ceremony is, of course, the child.

Why do I bring this metaphor into a research enquiry on the meaning, place and practice of assessment through the learning strategies of children? It is because when and if I am asked what constitutes evidence of learning, I believe as Drummond (2003) writes, in the importance of including the affective and emotional learning of children, respecting their emotional powers, as well as their intellectual powers, just as I experienced in Reggio Emilia. What are all the emotional complexities within the child to prepare tea for us? What are the
emotional processes within the child to set the stage for preparing tea? Can learning occur without emotional attachments involved? And how can the adult assess or rather, give value as a way to assess these emotional complexities constituted as learning within the child?

These questions, I believe, seek into the nature of learning and notions of learning, viewing learning as a social practice taking place through the interactions of the child with people, things, and the world around him/her. Delandshere (2002) observes the limitations of current assessment practices in the lack of a clear articulation of the theories and concepts, in the nature of the assumptions made about learning, and in the exclusion of certain conceptions of learning. Conceptions of learning based on socio-cultural theory from which this research enquiry approaches learning, views human experiences which include emotions are socially mediated through cultural tools and artifacts, such as language (Vygotsky, 1978), but also people. This conception of learning needs to be investigated in relation to assessment practices as its perspectives and focus on learning may appear to be different from those implied in current educational assessment and measurement practices working from a behaviorist perspective.

What I hope to convey through my literature review as a trajectory of my thoughts in addressing the research question and constructing knowledge on the relationship between assessment and documentation, and how documentation may foster new ways of learning for both the adult and the child, first of all, is to address the meaning of assessment in relation to the conceptions of learning represented by theories of learning. This section of the literature review will consider assessment literature which offers an analysis of the theoretical and epistemological foundations which seem to undergird the need for closer investigation, and
perhaps change in educational assessment practices. Following, in this notion of the need for change, the meaning of assessment from a socio-cultural perspective, which looks into the meaning of group learning, interprets the theory of Vygotsky as a framework. The bodies of literature from the Reggio Emilia educators provide a lens into viewing assessment practices based on socio-cultural theory, with a focus on documentation as a methodology to observe, interpret and assess the process of learning of young children which is respectful and sensitive to their emotional and intellectual powers. My literature review will also consist of research work performed by educators in the field of early childhood education utilizing various methods of observation to assess the learning of young children. In my concluding remarks, I hope I will be able to address the gaps in the research findings of assessment literature in order to address the specific issues relevant to the research questions to give forth a direction on the subsequent empirical investigation of my research enquiry.
Literature Review

Conceptions of assessment for learning – analysis of the theoretical and epistemological foundations

Gipps (1994) writes of assessment undergoing a paradigm shift, from psychometrics to a broader model of educational assessment, ‘from a testing and examination culture to an assessment culture’ (p. 1). This broader model of educational assessment offers wider ranges of assessments to include teacher assessment, records of achievement, practical and oral assessment, written examinations, standardized tests, as well as incorporating criterion-referenced assessment, formative assessment, performance-based assessment and norm-referenced assessment. And because of this broader meaning given to assessment, a wider range of purposes of assessment is given, for example, to support teaching and learning, providing information about students, teachers and schools, act as a certificating device, driving curriculum and teaching. And as Gipps suggests, a fundamental question we as educators must ask of ourselves is ‘assessment for what?’ (p.3).

Another fundamental question related to assessment practices which Delandshere (2002) highlights as being rarely asked is the question: ‘what does it mean to know?’ as opposed to the main assessment question currently asked: ‘what do students know?’ Delandshere recognizes the prior question as critical. Gill (1993) has also noted:

“Among the many and various articles and books on quality and direction of American education, one searches in vain for an in-depth discussion of how knowing takes place, of who knowers are, and of what can be known” (p.1).
Delandshere (2002) reiterates the need to frame the issue of knowledge and knowing in ways which can guide education practices which includes assessment practices and to reconnect our educational practices to theoretical and philosophical considerations to clarify the assumptions we make about learning and teaching.

Delandshere (2002) notes the lack of clarity about specifying the theoretical perspective and the definitions of learning and knowing from which they work in the assessment literature by researchers who recognize the need for change in assessment practices. For example, in the Frederiksen et al. (1993) volume, Delandshere observes that although the authors seem generally to be working from a cognitivist perspective including key concepts as memorization, schemas, mental processes, task and ability structures in order to explain how the mind processes information, knowledge seems to be equated with factual information.

Pellegrino et. al. (1999) also use categories and concepts such as aptitude, ability, achievement, competence, performance and proficiency as concepts universally meaningful and unchallenged, and leaves us to question the theoretical connections and implications of these concepts in the confusion of what it means to learn or to know where knowledge seems to imply information, but in some instances, it also seems to refer to cognitive structure.

Constructivist perspectives of learning (Masters and Mislevy, 1993) state that:

“learning is increasingly being recognized as an active process through which students construct their own interpretations, approaches, and ways of viewing phenomena, and through which learners relate new information to their existing knowledge and understandings” (p. 220).
However, in the discussion of how to assess this constructed knowledge, Delandshere (2002) notes that there seems to be a recourse to cognitive psychology and complex task analysis in this following view that has shaped the work of Mislevy and his colleagues (2001):

“The cognitive perspective includes both the constructivist tradition originated by Piaget and the information-processing tradition developed by Newell and Simon, Chomsky and others. The focus is on patterns and procedures individuals use to acquire knowledge and put it to work. The situative perspective focuses on the ways individuals interact with other people in social and technological systems, so that learning includes becoming attuned to the constraints and affordances of these systems. In this paper, we use the term ‘cognitive psychology’ broadly to encompass both of these perspectives.” (p. 22).

Delandshere (2002) questions the possibility to anticipate and predict the cognitive structures, processes, and skills involved in all individual constructions, and further adds that the cognitivist, constructivist, and situativist views of learning have been lumped together and contrasted to behaviorist perspectives, without much regard for the different assumptions implicit in these views about learning.

The literature of cognitive theory, often thought to be different from behaviorism, recognizes the mind as playing a role in the learning process. However, as Slife and Williams (1995) point out, both perspectives are grounded in the same epistemology and work from the same ideas rooted in empiricism – “the notion that our learning and memory are primarily derived from our experience of events of the world” (p. 67), and rests on the same deterministic assumption. Such determinism implies the possibility to control people’s learning – where behaviorist control operates on yielding a particular response from stimuli and reinforcement, and to manipulate cognitive processing by structuring the information to require particular responses. These deterministic assumptions has implications for the meaning of assessment
which rests in the space of predictability which seems necessary for statistical modeling, where teaching consists of structuring the information to produce desired outcomes or responses.

Many branches of constructivism and constructionism are viewed as postmodern theories (McCarty & Schwandt, 2000; Phillips, 2000; Slife & Williams, 1995) that evolved as a critique of empiricist epistemology and modernist assumptions. The main critique of constructivism/constructionism rests in the understanding that learning occurs through individual constructions through the process of assimilation and accommodation to the disequilibrium in the experiences of the individual in the environment. According to McCarty & Schwandt, (2000, p. 49), ‘ …there is to be no notion of correct solution, no external standard of right and wrong. As long as a student’s solution to a problem achieves a viable goal, it has to be credited.”

From such radical perspectives, it is problematic to consider what forms of assessment would constitute as legitimate evidence of students’ learning and understanding. However, I believe there are variants existing between radical views that may be explored for implications on assessment practices which have not perhaps been fully considered, found in the body of literature that includes historical, socio-cultural, and activity theories of learning. I believe in this space, learning and knowing are defined in ways that may offer a different perspective to those found in the assessment literature related to theories of learning thus far.

I like to consider the following passage by Lave & Wenger (1991, pp.50-51):
‘a theory of social practice emphasizes the relational dependency of agent and world, activity, meaning, cognition, learning and knowing...learning and knowing are relations among people in activity in, with, and arising from the socially and culturally structured world...One way to think about learning is as the historical production, transformation, and change of persons.’

Gill (1993) also observes the key idea that knowledge is not a thing to be possessed, but an activity to be engaged in. Such a conception of knowing and learning reflect on knowledge as action, participation, and transformation of individuals within specific and cultural contexts, a shift from the conception of knowledge as generalized propositional representations by individuals and transferable from context to context.

Social constructionists have been influenced by the earlier work of Vygotsky and give a central place to language in understanding learning and how meaning is created in and from spoken and written texts. Lave and Wenger (1991), however, underlie their conception of learning as social practice and co-participation mediated by language, where learning is not located in the individual’s mind, but takes place in interaction with and through others. I believe the educators from Reggio Emilia also hold a similar view, but extending on the concept of mediation to include the metaphor of the ‘hundred languages’.

Based on the view that learning cannot be predetermined, the view on learning and teaching are differentiated in that ‘learning can take place where there is teaching but [it] does not take intentional instruction to be of itself the source and cause of learning’ (Lave & Wenger, 1991, pp.40-41). Although this may not necessarily be a new idea, I believe it offers a space of departure from the teaching-learning connection implied in movements such as standards-based reform or measurement/assessment driven instruction.
I like to participate in the view Gipps (1994) takes that the purpose of assessment is professional, that is, to support the teaching and learning process and cycle, and not as providing information on education systems and schools’ performance to government or taxpayers. When young children enter school for the first time, there is a need for educators to understand that young children bring with them learning dispositions which have been acquired before entry into school. Extending this conversation on the purpose of assessment lies my underlying interest on how best can we as adults give credibility, reliability, validity to the potentials of young children as learners, which include their affective and emotional powers, and which is respectful of children as members of a society. By placing assessment in education, I believe this action makes moral and philosophical demands on our thinking, rooted in our epistemological beliefs on learning, and requires a need to search for ways to make our assessment practices not only more effective but we must also recognize children’s rights as learners, and commit ourselves as educators the responsibilities we have towards the education of children.

The purpose for me to write my literature review is not only to provide theoretical frameworks or justification for this research enquiry but also to help me acquire a reflexive practice in order to help clarify my perspective on the meaning of assessment and of knowledge, ‘what it means to know’. I like to perceive assessment as a process in which our understandings of children’s learning is acquired through close observation and reflection and used to evaluate and enrich the curriculum we offer, nurtured by the elements of value that emerge from the process itself. I am inclined to hold the view that assessment is essentially provisional, partial, tentative, exploratory and inevitably, incomplete. I like to believe that assessment examines our understandings and directs us to a sensitivity to
knowledge, where the actors, both children and teachers, are responsible, though at different levels, for the learning processes.

As Thomas and Oldfather (1997) have pointed out, there are logical connections between teachers’ epistemological beliefs and their assessment practices. If one believes knowledge is static, it follows that assessment should focus on scoring content. If one believes knowledge is dynamic, then it follows that assessment should focus on constructing a narrative about process. If one believes knowledge is transmitted from experts, it follows that assessments should be individual and focus on cognition. If one believes knowledge is actively constructed and reciprocal, it follows that there should be both individual and group assessments in order to assess where one performs alone and with others. Kusch (1999) has found some evidence of this logic where student teachers who studied reflective practice in mathematics methods assessed during the lesson and asked pupils to participate in their assessments, whereas student teachers who studied conventionally assessed after the lesson. Black and Wiliam (1998) have noted that a feature absent from a great deal of research is that assessment processes are, at heart, social processes, taking place in social settings, conducted by, on, and for social actors. My epistemological beliefs lie in an social constructivist assumption where learning is situated, not only in the experiences that give rise to it, but also in the interactions among people and the cultural artifacts which people bring with them, where possibilities are looked at rather than looking at what already exists.

My study of research is placed in the context of an Early Learning Center of children between the ages of 3-5, in an international school setting in Japan with an aim to investigate the meaning, place and practice of assessment through the individual learning strategies of
young children within the group and the learning of the group through documentation as a methodology because I believe groups can provide a powerful context for learning even for the youngest members amongst us. However, most aspects of instruction and assessment practices focus on individual performances and achievements. My area of interest is on the learning of young children and how children learn and how best to assess their learning. I believe one of the ways to understand this process of learning is interpreting the learning of individuals in a group context. When I write of groups, I am not conceptualizing group learning where, for example, a teacher teaches a song to the whole class as a group and the children learn to sing the song together. I am defining the term group as a ‘learning group’ which proposes a degree of intentionality where a group of children enter into an inquiry together where the focus of the learning group is on solving problems, creating products and making meaning.

Within such a conceptual framework of ‘groups’, Harre (1984) writes that the capacity for self-knowledge must be understood in terms of social relations, whereby what Western culture often takes to be ‘an individual’s own isolated mental activity, self perception and self assessment appears in other cultures as a social process involving others in quite definite social relations to the person at the center of the cognitive work’ (p. 259). I have the fortune to observe such cases in the preschool classroom, one of many daily experiences, where a child assesses his sense of ‘funniness’ by adopting the style of his friend who gained heaps of laughter from the class beforehand by making up words to a familiar tune, and uses the response of his classmates in laughter as a barometer for assessment on his own ‘funniness’, the child’s social being and personal being both at work.
The meaning of group learning – theories of Vygotsky as a framework

To investigate into the meaning, place and practice of assessment, I refer back to the link between learning and assessment by asking these two questions: How do we best look closely at children’s learning? And how do we best strive to understand it? The theories of Vygotsky (1978) have informed my thinking in addressing these questions and has provided a framework to an understanding of group learning, which is crucial to the nature of learning within young children. I believe his thinking is central to any serious discussion of children’s learning process and in trying to construct a conceptual framework for investigating how children learn, Vygotsky’s presentation of a dialectical conception of the relations between personal and social which are shared and not separate or self-contained provide a lens into understanding the developing systems within children and conceptualizing the learning of individuals within a group.

In order to understand human cognition, Vygotsky (1986) conceives learning as social and cultural, rather than an individual phenomena. This perspective views knowledge as concept formation co-constructed through the experiences with and through others, which include both the child and adult, rather than as purely information which is passed down; and that children are defined as culturally and socially situated learners rather than as defined by their age or IQ. And thus, I believe there is a need to reflect on the assessment practices of educators to critically view the learning of young children as individuals but within the context of a group. Vygotsky’s theoretical framework, what has come to be known as socio-cultural theory, helps provide an account of learning and development as mediated processes, which include people as precious resources for mediation with a particular emphasis on
speech as a psychological tool. Vygotsky’s theoretical framework also offers the possibility to view material tools as products of human cultural activity, which I believe are enhanced when people have the opportunity to come together as a group, which in turn have the possibility to act as factors that shape human functioning (Daniels, 2001).

I begin by citing the term ‘zone of proximal development’ (ZPD) in *Mind in Society* (1978) as Vygotsky writes:

“the distance between the actual development as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p. 86) and “what the child is able to do in collaboration today he will be able to do independently tomorrow” (Vygotsky, 1987, p. 211).

Chaiklin (2003) writes of the suggestion made by Werstch (1984) that if this theoretical construct was not elaborated further, there is a risk that “it will be used loosely and indiscriminately, thereby becoming so amorphous that it looses all explanatory power” (p. 7). In the context of research on the negotiated nature of teaching and learning, Chaiklin further continues with what Palinscar (1998) suggests that the concept of the ZPD is “probably one of the most used and least understood constructs to appear in contemporary educational literature” (p. 370). It is my hope that this research enquiry will endeavor to conceptualize the theoretical construct of Vygotsky rigorously and that the concept of the ZPD in the context of the learning group of a group of 4 children and a teacher in this research enquiry will be continuously reflected upon in exploring the meaning, place and practice of assessment in the experiences with and through the children and the teacher.

A premature interpretation of the conception of the zone of proximal development can mean
to be when there is an interaction on a task between a more competent person and a less competent person, the less competent person becomes capable of performing the task independently at what was initially a task completed together. To begin a path of more rigorous investigation on the concept of the zone of proximal development, I refer to Chaiklin, (2003) who writes of the common interpretation of the zone of proximal development to include three aspects, which he names: generality assumption (i.e., applicable to learning all kinds of subject matter), assistance assumption (learning is dependent on interventions by a more competent other), and potential assumption (property of the learner that permits the best and easiest learning) (p.41).

In the context of this research enquiry, the focus of the learning group is to solve problems, create products and make meaning with and through others. I believe the generality assumption offers the perspective to view the ZPD within the focus of the learning group, not as concerned with the development of a skill of a particular task, for example, to mix paints or to use a paint brush, but rather, be related to the development of learning how to learn. The focus of the learning group within this thinking shares a focus on the development of learning how to learn in a group, that is more specifically, to observe how another child might mix paints, or to listen to each other’s ideas on how to create colors by mixing paints, analyzing the relationship between learning and development.

In relation to this development of learning how to learn, the focus, Chaiklin continues, is not so much on the importance of more competent assistance, but rather should focus on understanding the meaning of assistance in relation to a child’s learning and development (assistance assumption). Chaiklin stipulates that the potential of the child is not solely the
property of the child (potential assumption) and therefore assistance only becomes meaningful when the maturing psychological functions of the child which are subjective are considered in relation to the assistance. This assistance takes into account the consideration what developments might lead to the next development (objective zone) not only observing the child’s performance on a single task, but considering the whole child, by examining the social situation for development, the existing psychological structure, to then objectively form the next structure.

According to John-Steiner and Mahn (1996), the concept of the zone of proximal development (ZPD) was created by Vygotsky as a metaphor to assist in explaining the way in which social and participatory learning takes place. Referring to Lave and Wenger (1991) the operational definition of ZPD has itself undergone many different interpretations. The notion of ZPD has been interpreted and developed by different researchers (for example Tharp and Gallimore, 1998a; Matusov, 1998; Wells, 1999) resulting in various models which apply, extend and reconstruct Vygotsky’s original conception. Lave and Wenger (1991) distinguish between a ‘scaffolding’, a ‘cultural’ and a ‘collectivist’ or ‘societal’ of the original formulation of the ZPD.

The term ‘scaffolding’ is a word coined by Jerome Bruner in 1950 used to describe young children’s oral language acquisition, for example, parents reading bed time stories or conducting read aloud sessions (Daniels, 1994). The ‘scaffolding’ interpretation is one in which a distinction is made between support for the initial performance of tasks and subsequent performance without assistance. However, within the ‘scaffolding’ interpretation, there seems to be fundamental differing perspective. For example, the term scaffolding could
be taken to infer a ‘one-way’ process wherein the ‘scaffolder’ constructs the scaffold alone and presents it for use to the novice. Newman et al. (1989), however, argues that the ZPD is created through negotiation between the more advanced other and the learner, rather than a donation of a scaffold. Tharp and Gallimore (1998b) also emphasize negotiation when discussing teaching as assisted performance in the stages of ZPD where assistance is required.

According to Moll (1990) Vygotsky is unclear on the matter of where the ‘scaffolds’ come from, from the more capable other, or whether they are negotiated and he never specified the forms of social assistance to learners that constitute a ZPD beyond writing about collaboration and direction, and about assisting children through demonstration, leading questions and introducing initial elements of the solving tasks. Rather than focusing on the transfer of skills from the more to less capable other, Moll (1990) suggests the focus of change within ZPD be on creation, development and communication of meaning through the collaborative use of mediational means. I take interest in examining the aspects of creation, development and communication as foci of change within children conceived as the learning within children and the meaning of the collaborative use of mediational means.

The ‘cultural’ interpretation of the ZPD is based on Vygotsky’s distinction between scientific and everyday concepts. According to Vygotsky, a mature concept is achieved when the scientific and everyday concepts have merged. Lave and Wenger (1991) however, note that no account is taken of the place of learning in the broader context of the structure in the social world. Daniels (2001) refers to Hedegaard (1998) and her discussion of what she calls the ‘double move approach’ in the process of concept formation within the ZPD which suggests the teacher guiding the learning activity both from the perspective of general
concepts and from the perspective of engaging students in situated experiences which are meaningful in relation to their developmental stage and life situations. I believe children are always in search of finding meaning in what they do, and also to what we do and say. In order to support this search of meaning making, situating experiences in relation to their developmental stage based on maturing mental functions and life situations must be carefully examined.

In the ‘collectivist’ or ‘societal’ interpretation, Engestrom defined ZPD as the ‘distance between the everyday actions of individuals and the historically new form of the societal activity that can be collectively generated’ (Engestrom, 1987, p. 174). Within this societal interpretation of the concept of ZPD researchers tend to focus on process of social transformation and involved the study of learning beyond the context of pedagogical structuring, which includes the structure of the social world taking into account the conflictual nature of social practice (Lave and Wenger, 1991).

These types of definition clearly offer different implications for schooling, instruction, and assessment practices. In attempting to formulate a research enquiry into the meaning, place and practice of assessment in relation to how children learn, it behoves me to think how the scope of definition can become fundamental to the concerns about the ways in which pedagogy is theorized, described and investigated. Vygotsky’s interest was in assessing the ways in which learners make progress and he discussed the ZPD in terms of assessment and instruction, and within both frames of reference, he discussed the relationship between an individual learner and a supportive other or others, even if that other was not physically present in the context in which learning was taking place. This concept of relationship
becomes explicit through Vygotsky’s identification of three higher mental functions – focused attention, deliberate memory and symbolic thought (Fraser, et al., 2000) thought to be unique to humans, and which he believed are developed through interactions with other humans. This trajectory towards a more socially connected account as opposed to Vygotsky’s initial use of genetic (historical/developmental) analysis, is described in the following passage:

Vygotsky seemed to be coming to recognize this issue near the end of his life. It is reflected in the difference between Chapters five and six of Thinking and Speech (1987). Both chapters deal with the ontogenetic transition from ‘complexes’ to ‘genuine’, or ‘scientific concepts. However, the two chapters differ markedly in what they see as relevant developmental forces. In chapter five (based on research with Shif and written during the early 1930s), concept development is treated primarily in terms of intramental processes, that is, children’s conceptual development as they move from ‘unorganized heaps’ to ‘complexes’ to ‘concepts’. In Chapter six (written in 1934), there is an essential shift in the way Vygotsky approaches these issues. He clearly continued to be interested in intramental functioning, but he shifted to approaching concept development from the perspective of how it emerges in institutionally situated activity. Specifically, he was concerned with how the forms of discourse encountered in the social institution of formal schooling provide a framework for the development of conceptual thinking. He did it by the teacher-child intermental functioning found in this setting. (Wertsch et al., 1993, p. 344).

As Daniels (2001) writes, most of Vygotsky’s writing tends to focus on the more immediate interactional/interpersonal antecedents of independent or seemingly independent functioning. Vygotsky’s concern with forms of discourse in formal schooling provides the basis and framework in my interpretation and understanding for pedagogy, as Daniels (2001) expresses, in that teaching and assessment should focus on the potential of the learner rather than on the demonstrated level of achievement or understanding, drawing on Vygotsky’s interest in assessing the ways in which learners make progress. Campione (1996) in what is termed ‘dynamic assessment’ has embedded this focus on process as well as product in assessment. In addition, teaching or instruction should create possibilities for development through active
participation that incorporates collaboration, that it should be socially negotiated and should entail transfer of control to the learner.

I believe Vygotsky (1978) was arguing for a perspective of child development that highlights development not as linear and evolutionary, but instead taking a ‘revolutionary path’ (p. 193), offering a dialectical approach where the adult is continually projecting learning beyond the child’s present capacities to focus on the child’s potentials in ways which connect with the child’s growing sense of self within their learning situations and environment. Such a revolutionary perspective allows teachers to foreground the social situation of development of the child. An example which Fleer (2006) writes in relation to the social situation of development is of the many European heritage communities where verbal language is privileged; and the difference in Mexican heritage communities where non-verbal competence is mastered at a earlier age which represents an important mode of communication.

‘The social situation of development represents the initial moment for all dynamic changes that occur in development during the given period. It determines wholly and completely the forms and the path along which the child will acquire ever newer personality characteristics, drawing them from the social reality as from the basic source of development, the path along which the social becomes the individual. Thus, the first question we must answer in studying the dynamics of any age is to explain the social situation of development.’ (Vygotsky, 1978, p. 198).

Young children, when they enter school, bring with them the society and cultural context in which the child is embedded. Then in viewing the child, and assessing the development of learning within the child, there is a need to understand development of the child as a form of transformation as a result of the child’s participation in cultural activities, mediated through
and with other people and cultural artifacts.

In terms of a sociocultural approach to learning and the assumption of how the mind develops, Bakhtin (1895-1975), the Russian philosopher who also lived in Russia at the same time as Vygotsky (1896-1934), but not personally acquainted, held ideas which seem to be quite compatible with Vygotsky’s writings on mediated action, in particular, Bakhtin’s ideas on utterance, voice, social language and dialogue, which seems to extend on Vygotsky’s claims about mediation of human activity by signs (Werstch, 1991). Meaning is central to the sociocultural approach to mediated action, and Bakhtin insists that meaning comes into existence only when two or more voices come into contact, that is, when the voice of the listener responds to the voice of a speaker (Bakhtin, 1986). Bakhtin stressed the idea that voices are always in a social milieu and that there is no such thing as a voice that exists in total isolation from other voices. Such a dialogic nature of the mind, and posing a fundamental Bakhtinian question “Who is doing the talking?”, where the presupposed answer is ‘at least two voices’ brings forth a collectivist orientation rather than seeking the source of meaning in the isolated individual. I believe there is a need to incorporate this orientation to view the meaning of assessment, where the focus of this research is to observe learning not as isolated acts, but to observe the actions of children in a group as a component of the social system.

Vygotsky writes in the following excerpt below how an individual becomes aware of him/herself only in and through interactions with others:

“The mechanism of social behavior and the mechanism of consciousness are the same…We are aware of ourselves, for we are aware of others, and in the same way as we know others; and this is as it is because we in relations to ourselves are in the same [position] as others are
to us…I am aware of myself only to the extent that I am another for myself, i.e. only to the extent that I can perceive anew my own responses as new stimuli.” (Vygotsky, 1979, pp.29-30).

Investigating into the meaning, place, and practice of assessment from a socio-cultural perspective by linking human experience to the social environment and the experiences of others, the responsibility which rests on educators to enhance the worthwhileness of the children’s educational experiences is significant. Drummond (2003) stresses that the children’s learning be the subject of teachers’ most energetic care and attention and offers her belief in the process of assessing children’s learning by looking closely at it and striving to understand it is the only certain safeguard against children’s failure.

**Literature from the educators of the Reggio Emilia Approach**

Whilst teaching practices based on socio-cultural perspectives have evolved and progressed in early childhood settings (Anning, Cullen, and Fleer, 2004), which take into account the social, historical and cultural dimensions of everyday experiences (Vygotsky, 1987), the authors note that assessment practices in relation to these evolving teaching practices have not progressed accordingly. Furthermore, the authors recognize retheorizing assessment practices based on socio-cultural theory poses complexities upon teachers needing to move beyond individualistic orientation of assessing students.

As a way to address these concerns, I refer to the literature from the educators of the Reggio Emilia experience, beginning with their methodology of documentation. The Reggio educators come from a premise that all children have the right to be supported in their
endeavors to develop their learning, and documentation is believed to be a tool for giving this support in a way that respects the children as individuals learning with and through others.

Loris Malaguzzi (1996) founder and guide of the Reggio Emilia Approach writes:

“Our work on documentation has strongly informed – little by little- our way of being with children. It has also, in a rather beautiful way, obliged us to refine our methods of observation and recording so that the process of children’s learning became the basis of our dialogue with parents.” (p.74).

Documentation is not meant to be merely anecdotal records of observation of children. The concept of documentation or ‘pedagogical documentation’ as Gunilla Dahlberg has recently defined it (Dahlberg et al., 1999) acts as a powerful tool for improving understanding of children and ourselves, for extending communication between the children, parents and teachers, and for professional growth. According to Gandini (1993) documentation in the schools of Reggio Emilia has several functions:

“To make parents aware of their children’s experiences and maintain parental involvement; to allow teachers to understand children better and to evaluate the teachers’ own work, thus promoting their professional growth; to facilitate communication and exchange of ideas among educators; to make children aware that their effort is valued; and to create an archive that traces the history of the school and of the pleasure and process of learning by many children and their teachers.” (p.8)

Gandini (2001) analyzes some of the essential aspects to help us understand the meaningful process of documentation. Through observation and listening to children with care and attention, the adult may discover a way of truly seeing and getting to know them; and through this process, the adult is able to respect the children for who they are and what they
would like to communicate to the adult. In order for the adult to be able to examine and reflect the observations together with other colleagues, the records of what the adult sees and hears leave significant traces of the observations in the form of documentation. The tools for gathering the traces, be they written notes, photographs, videotapes, etc., have their own bias, potential and limitations, and therefore, planning the ways of observations should be taken into account. Once the observations have been gathered, before sharing them with colleagues, they are edited, and through this preparatory process, the teachers are able to reflect on what they have observed and become more aware of their way of relating to the children.

The observations of teachers provide the basis of communication, where teachers can reflect on them together and compare points of view. This reflective practice of documentation offers insight into developing assessment practices from a socio-cultural perspective providing multifaceted interpretation of what each one sees and hears where teachers are able to experience professional growth alongside the pleasure and tensions of cooperating and learning with and through others.

Gandini (2005) through her conversations with atelieristi in the Reggio schools, has further explored the aspect of documentation in depth, highlighting research with new languages and tools (digital language) that sheds new light on the role of documentation. More recently, the Reggio educators have focused much more on the construction of a portfolio for each child, offering a sort of mini-story that allows the child to see himself or herself from the inside, but a narration of self as stories and experiences lived and constructed with and through other children giving significance to the actions of the individual and those of the group, rather
than focusing on the individual alone.

Documentation gives visibility to the thinking processes of both children and teachers and proposes a social constructivist perspective in the way multiple, complex and subtle interchanges with other people are thought to be substances from which intelligence and learning is co-constructed. The Reggio educators’ concept of school and education gives rise to the meaning attributed to documentation:

“School, including the school for young children, is an educational place, a place of education; a place where we educate and are educated; a place where values and knowledge are constructed. School is a place of culture – that is, a place where a personal and collective culture is developed that influences the social, political, and values context and, in turn, is influenced by this context in a relationship of deep and authentic reciprocity.” (Rinaldi, 2001, p. 38).

The relationship between ‘self’ and ‘other’ is seen as vitally important in the choices made to construct ourselves whether independently from others or existing with and through others and documentation helps reflect and reveal the changes that take place within the children and teachers in the process of knowledge construction generated by the relationships and interactions with each other.

The Reggio educators derive their conclusions about what learning means to them from their 50 years of research in working with young children and infants through their method of documentation. But more recently, their evidence is based in their collaborative research with Project Zero, an organization founded in the Harvard graduate school of education initiated by Howard Gardner, in a joint venture to research how young children learn, producing a book titled *Making Learning Visible* (2001).
Gardner (2001) makes a statement on documentation of student learning that is integral to the “Reggio project” as constituting an exciting form of assessment whose potential needs to be demonstrated to the rest of the world. Gardner, whose empirical work in developmental psychology and neuropsychology is renowned in his development of “the theory of multiple intelligences” (Frames of Mind, 1983; 1993). Project Zero is an organization founded in 1967 by philosopher Nelson Goodman, when a funder approached the Harvard Graduate School of Education to determine an interest in making an inquiry into arts education, at a time 10 years after the Soviets launched their satellite Sputnik when at that time a great deal of money was being spent to improve scientific, mathematical and technical education in the United States. Following the development of “the theory of multiple intelligences”, the educational work of Gardner’s research group at Project Zero has followed two principal directions – firstly, focus on how best to assess student learning, with particular attention to how the multiple intelligences can be observed at work and secondly, focus on how to bring about better understanding in various disciplines. These 2 areas of focus have been developed in the principal arena on teaching for understanding.

These three lines of work – multiple intelligences, new forms of assessment, and education for understanding suggest areas in which the work of Project Zero overlaps with the longstanding concerns of Reggio Emilia, that young children organize and make sense of their experiences, not restricted to eight or nine intelligences, but with “the hundred languages”. Gardner views the process and method of documentation as an investment that offers powerful means of communicating to all interested parties, children, parents and teachers, what has been learned in a significant experience.
Rinaldi writes (2001) of her surprise, as well as of her pleasure, in discovering the development of a theory “in the plural” in another country, in another culture – no longer just one language (the verbal one), said Malaguzzi, but a hundred languages – no longer just one intelligence, said Gardner, but eight. Apart from the number, the concepts of plurality, possibility, richness, expansion and dialogue are important elements to be found in the thinking of both educators.

To further the discussion on the concept of dialogue, Freire (1970), writes of dialogue as a human phenomenon, where the word is the essence of dialogue. Within the word, for a word to be true, he identifies two dimensions, reflection and action, and that it is only by true words that men and women can transform the world. Dialogue, then is defined as an encounter between people, mediated by the world, in order to name the world. I am moved by this statement by Freire:

“Dialogue cannot exist, however, in the absence of a profound love for the world and for people. The naming of the world, which is an act of creation and re-creation, is not possible if it is not infused with love. Love is at the same time the foundation of dialogue and dialogue itself.” (p. 89)

I find it moving and illuminating to read and re-read this statement by Freire as Carlina Rinaldi also likens the concept of documentation as an act of love. I believe the process of documentation attempts to capture the true words of both children and adults; documentation can be seen, in a sense, as dialogue, or more specifically, as a tool for entering into dialogue, to name the word and re-create the world of learning of young children. Freire continues to highlight the elements of humility and faith in the meaning of dialogue, that dialogue cannot exist without humility and dialogue requires faith in humankind. Once again, when trying to
understand human phenomena, the affective and emotional elements cannot be disregarded. I believe listening to each other requires suspension of judgment, and the act of such suspension is translated as humility and faith in humankind. If the act of assessment may be perceived as dialogue, founding itself upon love, humility and faith, then all members concerned, that is the children and adults, have the possibility to develop a relationship built upon mutual trust. If the purpose of educational assessment is to look at the learning of children, this point of view offers the possibility to view education, first and foremost, with a conviction that children, as much as adults, have the potential and right to feel like masters of their thinking.

Assessment deriving from various methods of observing young children

Carini (2000), looks at children’s learning through a framework she created termed as a ‘Descriptive Review of the Child’ (p. 11). She begins in her book with a quote from John Dewey (1938, p. 38):

“Every experience is a moving force. Its value can be judged only on the ground of what it moves toward and into…It is then the business of the educator to see in what direction an experience is heading…Failure to take the moving force into account so as to judge and direct it on the ground of what it is moving into means disloyalty to the principle of experience itself”.

Carini is, like John Dewey, an educational theorist whose work is fundamentally rooted in the experience of running and establishing a school with children as the central focus. She is the founder of the Prospect School, founded in 1965 in Vermont, USA, which with deep regret and sorrow needed to close when weak financial base gave way. However, with the aim of
continuing many of its functions, “Prospect Archives and Center for Education and Research” was created where many resources and activities continue and where collections of children’s work are archived in use for teaching and research purposes. In the heart of her intellectual movement on promoting qualitative and alternative modes of scholarship, is that children and teachers are shapers of meaning and interpreters of experience and insists this as the root of educational reality.

The teachers in her school were committed to an examination of the school’s practice through observing, recording, and describing what happened in the classrooms and for children on a daily and continuing basis, and in this way, the school can generate knowledge of children, of curriculum, of learning and teaching. From the outset, Carini’s design of the multifaceted descriptive inquiry of children focused on process, paying close attention to how a child goes about learning or making something, and not only to assessment of what the child learned, made or did. The phrase “moving force” in the passage quoted above, expresses what her school was striving for, that is, learning experiences that lead on, and in which Dewey (1938) also says, “arouse curiosity, strengthen initiative, and set up desires and purposes sufficiently intense to carry a person over dead places in the future” (p. 38).

I believe to give value to this perspective, that when a teacher can see the process, the child in motion, there is then the possibility to gain insight needed to adjust the teacher’s approaches to the child accordingly. The aim of the Prospect School, under Carini’s direction, was to tailor learning to the learner, and for this aim to be credible, it was essential to be able to see and to reflect on how the child was going about making sense of the world. And furthermore, the teachers at the Prospect School were committed to a collaborative inquiry, counting on
the perspectives of all in making sense of the educative process observed.

I like to draw on Dewey (1910/1933) in his definition of reflection as a meaning-making process that moves a learner from one experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas. Reflection, then, is a desired mode of thought in understanding the meaning of assessment in a community of learners where the interaction with others requires space for dialogue and critical enquiry about children and how might we understand the child, knowledge, and learning which holds attitudes that value the personal and intellectual growth of oneself and of others.

Recording children’s narratives known as ‘Learning Stories’ developed by Margaret Carr as a framework for assessment interactions (Carr, 2001) has challenged assessment practices in early years settings in New Zealand. Whilst assessment procedures tended to be problem-oriented (Wilks, 1993), Carr’s approach focuses on the child as a learner in specific contexts rather than on achievement objectives and skills, which are more in focus with Te Whariki, a national curriculum implemented in New Zealand with socio-cultural underpinnings with influences associated with interest in the Reggio Emilia Approach and in project learning. Te Whariki views the child as a ‘competent learner and communicator’ and weaves the four central principles of empowerment, holistic development, family and community and relationships to provide a holistic curriculum (Anning et al., 2004). ‘Whariki’ refers to a woven mat, on which everyone can stand, yet interweaves central principles and goals into different patterns or programs which individual centers can develop to address their own particular learning situations and contexts (Carr and May, 1994).

‘Learning stories’ are structured narratives which frequently include the interactions between
teacher and learner, or between peers, of episodes of the experiences as dictated by the learner, which also include an analysis of the learning (a review) and a ‘what next’ section. ‘Learning stories’ act as documented, narrative and credit-based assessments which crystallizes the long-standing early childhood practice of describing and discussing what a child has done and achieved during the day. In this way, ‘Learning Stories’ are designed to reflect and enhance reciprocal and responsive interactions between the child, teacher and family and to develop an atmosphere of trust and respect. Carr writes:

“Learning Stories embody a coherent understanding of progression…over time, the Learning Stories become longer, deeper, broader and more frequent” (2001, pp.159-61).

I believe the metaphor of story situates the educator as one who is committed to take the learning of each child seriously as a process with living landmarks, similar to the concept of documentation within the Reggio Emilia Approach, and not as ‘product metaphors’ as Drummond (2003) writes, to suggest that learning in relation to assessment is time-bound, momentary and discontinuous described in terms of targets, levels, outcomes, and goals.

My literature review now moves into research work conducted by educators utilizing various methods of observation as a way of assessing children’s learning. Forman and Hall (2005) assert that teachers are better able to engage children in conversations and investigation that have the potential to extend learning in both depth and breadth through the process of observation, documentation and interpretation of children's goals, strategies, and theories. They offer the digital video as a way to observe and document children’s explorations and investigations and to revisit the documented observations in order to determine the children’s
goals and the strategies they choose to attain those goals.

Research on extending learning of children and teachers through instant video revisiting (IVR), a term coined by Forman (1999), has generated data to help teachers and children understand the behavior of children and revisit the children’s actions immediately, with the children using video clips. This research, revealed through the work of Hong and Broderick (University of Michigan at Dearborn; East Tennessee State University, 2003) was conducted for one semester in two preschool classrooms with children 2.5 to 5 years old. IVR in these classrooms became a daily classroom experience which provided the continuity for deepening a child’s understanding of particular experiences. The video frames served as learning tools for the children’s construction of knowledge and the teacher’s reflection of this learning. IVR provided evidence that the children are attracted to revisiting previous events by watching their actions on the viewing screen of the video camera, in situations such as resolving social conflicts, or analyzing the process of the child’s thinking in constructing a story (*Early Childhood Research and Practice*, Vol 5, No. 1, 2003).

As well as video, the study of photographs of children’s learning and classroom experiences is fast becoming central to the work of many new and experienced early childhood teachers (Goldman-Segall, 1998; Project Zero et al., 2003). The notion that photography is a visual language (Kepes, 1944; Whiting, 1979) and a research method (Collier and Collier, 1986; Prosser, 1998) is not new, but what is new is the use of photography as a seminal part of teacher documentation of teacher inquiry. Although early in the 20th century, the use of photography as a research method by anthropologists was marginalized due to its lack of depth, descriptive and explanatory value (Edwards, 1992), in the 1940’s, the work of Gregory Bateson and Margaret Mead (1942) in their integration of photography as part of an in-depth
The processes of observation, documentation, and interpretations of children’s actions, goals, strategies and theories can offer insight into children’s thinking for teachers to engage in conversation, dialogue and investigation with children to make connections with their curiosity to extend learning. Children are curious about events and phenomena, such as where does snow come from or why did the fish die. Based on research evidence (for example, Piaget, 1932/1965; 1936/1952; 1929/1960) children have many ideas that are not taught to them and these ideas are the product of thinking about causes that are not easily observed. Constructivist educator, Rheta De Vries conducted a study (De Vries, 1986) on the development of children’s understanding of shadows through the process of observation, documentation and interpretation that three year olds often use their intelligence to reason
that their shadows go inside themselves when they cannot see them or five year olds often believe their shadows are under their bed or covers at night. De Vries did not require children holding such beliefs to verbalize the correct answers to short circuit the constructive process. The researcher, rather, gave many experiences in which they could experiment with making shadows in order to test their ideas and develop reasoning power and confidence in the power of their reasoning, in other words, the potential of the learner.

The National Council of Teachers of Mathematics (1991) emphasizes that young children need play-based opportunities to develop and deepen their conceptual understanding of mathematics. From a social-constructivist perspective learning is more likely to occur if adults or more-competent peers mediate children’s learning experiences; and the concept of reflection (Dewey, 1933) on the part of the teacher to connect previous experiences with present on-going actions is to play a major role in extending the learning of students. Within this frame of thinking, in a study to create an environment that is mathematically empowering with an aim to establish the foundation for constructing, modifying, and integrating mathematical concepts in young children (Kirova and Bhargava, 2002), the ability of the teacher to recognize children’s demonstrated understanding of mathematical concepts through observation of the children in play, to document in the form of daily journal reflection, and to interpret the observations were observed.

Within the field of early childhood education of today, my stress is the notion that the child’s perspective should be taken into consideration in research as well as in practice. Bronfenbrenner (1979) claimed, some 25 years ago, that a child’s perspective is always subject to an adult’s interpretation: this interpretation is how adults make sense of what
children tell them. Samuelsson (2004) posed two central questions on this perspective: “How do we as researchers and teachers interpret the child and his or her learning?” And “how do we participate in the process of making the child’s view visible?” Samuelsson uses photo, video taping and looking closely at children’s drawing as her research methodology to research on this area of child’s perspective. She believes that quality in early childhood education today is very much related to communication and interaction, and therefore, children’s narratives or opportunities to tell their stories become central to quality. Through Samuelsson’s research methodology, she claims that a child’s ability to tell stories or express his or her opinions or perspectives is dependent on whether the child has relationships with other children and the teacher and also to be aware of how a child’s way of expressing him/herself is only a small fragment of the total experience or knowledge of the child.

Kolbe (2001), stresses the importance of looking closely at the children’s deep involvement and their skills they contribute as they sculpt, or paint or draw and at the ideas the children share while they create together an invented world. She reminds us the importance of ‘the doing’ and how this ‘doing’ deserves the adult’s full attention. Kolbe views children as eager explorers ‘with an intense desire and will to make sense of their world’ (p.7). She believes that some of the most effective means the children have for explaining things to themselves and to others are drawing, painting and claywork as tools for thinking, where these tools become sources of inspiration and glue to unite children in their quest for knowledge and understanding. Through utilizing these media and processes to make images, she has observed that the children explore feelings and ideas, and through their images, they communicate thoughts to others as well as themselves.
Kolbe’s work, I believe, reflects Vygotsky’s discussion on ‘pre-written language’ (1978) within the understanding of the difference between first-and-second-order symbolism. As Vygotsky explains, first-order symbols denote actions or objects as a stick for a horse, or pencil dots on a paper for running; and second-order symbols denote symbols such as written signs representing spoken words. Vygotsky claims that both drawing and writing in the earliest stages are first-order symbolism and terms them as graphic speech.

Informed in the book written by Holzman and Newman (1993) on the aspect of playing in/with the ZPD, play, especially pretend games that children so like to play, makes links between gesture and language where gestures indicate the meaning of things. So too, drawing becomes independent signs aligned with speech, where children’s drawing is likened to telling a story. The child may move from communicating initially by making marks on paper, to drawing or scribbling something suddenly to discover meaning, such as the lines joined together to appear looking like a whale, and then to announcing beforehand what one would like to draw or about to draw. Through drawing, children act as writers and communicators, embodying the dialectical relationship between what is and what can be, locating the developmental aspect of drawing in the child’s activity, where drawing, as much as play lies in the ZPD for the unity of meaning making and language making.

In a research study conducted by McKay (McKay and Kendrick, 2001a, 2001b), drawings by children were collected over four years to inquire if children have visual images of literacy. In the process of their research, not only did they discover that children have very rich images of literacy, but their drawings revealed complex understandings about multifaceted and interactive nature of literacy. Moreover, how children perceive themselves, and others,
in relation to literacy was evident in their drawings. Children’s drawings have been referred to as “interesting mixes of graphic and linguistic resources, in the service of complex conceptualizations” (Gardner, 1980, p.154).

In a similar vein, Weber and Mitchell (2000) suggest that drawings can communicate simultaneously on many levels as "layered paintings that hide or combine other social, cultural, and personal images” (p. 19). These authors, who use students’ drawings gain insight into how students read cultural imagery of teaching and also underscores that aspects of personal and social knowledge may have been overlooked in other sources may be more available in drawings. As image-based research has been utilized in a limited way within the field of education (see Haney, 1984; Lifford, Byron, Eckblad, and Zieman, 2000; Prosser, 1998), perhaps I may propose in my research enquiry how images may provide researchers with a different order of data and an alternative to the ways in which data was perceived in the past, as I believe visual images are different in nature from words in their allusion to reality and in the ways in which participants see themselves and can be seen by others.

Studies as conducted by DeVries, Reese-Learned, and Morgan (1991) suggest that preschool programs based on child-initiated learning activities contribute to short and long term academic and social development, while preschool programs based on teacher-directed lessons obtain short-term advantage in children’s academic development by sacrificing a long-term contribution to their social and emotional development. DeVries and her associates closely observed three kindergarten classes using Direct Instruction, a constructivist approach based on child-initiated activities, and an eclectic approach. Analyzing two game-like activities, they found that the children from the constructivist class were more interpersonally
interactive, with a greater number and variety of negotiation strategies and shared experiences, than children from the other two classes (DeVries, et al., 1991).

In the Training for Quality study, Epstein (1993) found that teachers with High/Scope training (child-initiated activities theory) enabled children to plan, carry out, and review their own activities and teachers used adult-child interaction to promote children’s reasoning and language skills. Marcon (1992) identified three preschool models operated in the Washington, DC. public schools – teacher-directed, child-initiated, and “middle-of-the-road” and examined the development of a random sample of 295 children attending these types of programs. Children from child-initiated classes showed the greatest mastery of basic reading, language, and mathematics skills, followed by children from teacher-directed classes, then children from the “middle-of-the-road” classes. At fourth grade, this same ranking of curriculum types appeared on children’s grade point averages, overall and in most subject matter areas. Child-initiated activities require the skill of the teacher to observe and assess the learning and meaning-making process. In other words, the ideas are child-initiated, but the teacher scaffolds their ideas by framing them to support and enhance learning.

In the Project Approach (Katz and Chard, 1989) small groups of students choose and then participate in an in-depth investigation of a topic that is of interest and relevance to them. The role of the teacher is to assist students in their collaborative efforts. In such a learning environment, the learner is transformed from being an absorber of information to one who interacts dynamically with it. Research suggests that project learning has the potential to foster a comprehensive knowledge base for teachers (Caine and Caine, 1997; Damon, 1995) that supports recently established guidelines and standards for teacher preparation programs
(National Board for Professional Teaching Standards (NBPTS), 1995; National Association for the Education of Young Children (NAEYC), 1996; National Council for Accreditation of Teachers Education (NCATE), 1997). Further, projects have the potential to increase student motivation for learning (Meece and McColskey, 1997). As project learning supports and reinforces many of the principles based on brain research, specific designs for implementing projects in early childhood teacher education have been published.

Students bring to the classroom knowledge that is constructed within the practices of their everyday lives outside of school. The politics of how this knowledge is represented and how teachers interpret this knowledge raises particular challenges in classroom settings where learners and teachers come from diverse historical, sociocultural and linguistic contexts (Stein, 2003). Then ideally, approaches to assessment and interpretation of student learning should focus on the individual child’s strengths and styles of representation (Sidelnick and Svoboda, 2000), respecting the children’s modes of representation that allow for a full range of human experience, i.e., ‘the hundred languages’ of children (Malaguzzi, 1996).

Piazza (1999) is among a growing number of language arts educators and researchers calling for multiple literacies perspectives that recognizes art, music, dance, drama and film as forms of literacy that play an important role in the development of children’s lives, particularly in the information age, where there is more need than ever to shape and express the world in meaningful ways. Kress and Jewitt (2003) also see the need to include in school curricula multimodal representations which allow for the expression of a much fuller range of human emotion and experience, while more often than not, information obtained about children’s literacy knowledge typically portrays literacy that is characterized by conventional forms of
practice and products found in schools (Barton, 1994). I hold a view that images of literacy in the broadest sense constructed by children provide us with insights into their personal experiences of literacy, that is what sense they have made of the complex world of literacy in their lives both inside and outside of school.

**Conclusion**

The prevailing issue or thread which I believe runs through the bodies of literature in exploring the meaning of assessment is the need for a more deliberate debate on what is meant by learning which observes the children’s potentials which include their intellectual and emotional powers, assessing learning and strategies for and of learning through a methodology that respects young learners in a way that what they do and think and feel is important to adults who know and care about them. Vygotsky’s premise, based on his sociocultural theory, is that the transmission and acquisition of cultural knowledge such as literacy in the broadest sense, takes place on an interpersonal level between individuals before it is internalized on an intrapersonal level. The concept of psychological tools, one of the cornerstones of the psychological theory of Vygotsky proposes the symbolic artifacts – signs, symbols, texts, formulae, graphic-symbolic devices - serve as a bridge between individual acts of cognition and the symbolic sociocultural prerequisites of these acts (Kozulin, 1998), such that children, rather than being lone discoverers of rules, master their psychological processes through tools offered by a given culture in and through others. This conceptual framework provides an understanding into how children learn in relationship to others and the dialogical nature of learning, the unity between behavior and mind as based on sociocultural activity, that is truly respectful, as proposed by Freire. The bodies of literature
from the Reggio Emilia educators and Carini address the aspect of the process of learning in their ways of assessing and giving value to the learning of children through the methodology of documentation.

However, I find gaps in other bodies of literature, for example, in IVR (Forman and Hall, 2005) where the focus is on the individual reflecting on his/her individual actions and not in the process of the learning taking place in relation to others. The literature on analyzing children’s drawings (Weber and Mitchell, 2000) although providing insight into observing drawings as a way of communication on many levels which include the social, the approach to assessment seems to focus on the individual child’s strengths and styles of representation, and not necessarily on the strength or styles of representation as a result of the interaction with others, that is in a group. In the Project Approach (Katz and Chard, 1989), learning is observed as enhanced with children working on an in depth project in small groups. The gap I wish to determine is how learning happens in the midst of the negotiating, the borrowing back and forth of ideas between children, to ‘catch’ that moment so to speak of learning in action, rather than on the general notion of learning as enhanced in a group. The important element to note is how the adult creates this space of learning as dialogue with and through the children, to illuminate on the potentials of children, where all actors are seen in a horizontal relationship built upon trust which is born out of love, faith and humility.

Teaching practices based on socio-cultural perspectives, which take into account the social, historical and cultural dimensions of everyday experiences (Vygotsky, 1987) have evolved and progressed in early childhood settings (Anning et al., 2004). However, I am informed by my readings from the authors that the assessment practices in relation to these evolving
teaching practices have not progressed accordingly. Furthermore, the authors recognize retheorizing assessment practices based on socio-cultural theory poses complexities upon teachers needing to move beyond individualistic orientation of assessing students. The method of documentation as identified by the educators of the Reggio Emilia Approach, is believed to be a tool that can offer the teachers the possibility to investigate into the meaning of assessment and assessment practices from a socio-cultural perspective. By looking at groups as a powerful context for learning, rather than at individuals alone, this research study aims to explore the meaning, place, and practice of assessment of an intentional group of young children through the method of documentation to inquire into how documentation may foster new ways of learning for both the child and adult in order to explore the relationship between documentation and assessment. Through this research inquiry, the complexities of assessment practices from a socio-cultural perspective, which has not been clearly articulated in the assessment literature thus far, hopes to contribute to this field of knowledge.

As I hope I have conveyed in my writing thus far, I take a stance that the concept of childhood is socially constructed (Saraceno, 1984) and culturally situated (Woodhead, Faulkner, and Littleton, 1998). I wish to develop a reflective awareness of my work as a researcher which will hopefully help to connect meanings, understandings, experiences thus hopefully to enhance the quality of our interpretive acts. The Reggio educators and Carini make a case for observation and description that is non-judgmental and non-evaluative, as the appropriate methodology for the study of human phenomena. Freire makes a case for dialogue as encounter between people with true words to create and re-create worlds based on love, humility and faith. These bodies of literature inform us that we must be in close and authentic company of the subjects, that is the children. In this way, the more we may observe
the children and the ways in which each child engages the world, we may also be able to view the complexity and variety of that engagement. Assessment as I wish to define it, does not articulate classification, generalization, and the normative, statistical methodology. I believe such assessment methodologies cannot accommodate or illuminate the particularities of children’s thinking and learning. It is my hope that through my research enquiry, I will be able to examine the place, meaning and practice of assessment of young children’s learning in the context of a group through the methodology of documentation. I wish to inquire into how documentation may foster new ways of learning and to inquire into the relationship between documentation and assessment in order to address the gaps in research on the assessment of learning from a socio-cultural perspective that takes place within young children in a conceptual space which illuminates diverse images of young children in action with others, taking into account cross-cultural experiences within an international school setting.
Chapter 3
Methodology
A Framing Narrative

This research enquiry inquires into the meaning, place and practice of assessment through investigating the relationship between documentation and assessment and how documentation may foster new ways of learning from a socio-cultural perspective. The approach to investigating this study is through action research set in two stages. The first stage includes the teachers of the early learning center in a pilot study to consider their understanding and practice of documentation emerging from the genuine interactions with the children as a source for planning in their work with young children. The pilot study provides context for the second stage in the form of a case study of one teacher and four children in a year long project pursuing the concept of color.

In an international school such as our own, the body of teachers is transient. The teachers who are hired overseas are contracted to work for 2 years, and the average number of years they stay is 3 years (Yokohama International School [YIS] archives). This transient nature of teachers is challenging for myself as director of the early learning center where we try to establish a culture of research on the learning of young children situated within the principles and ethos of the Reggio Emilia Approach paying close attention to the process of learning through the method of observation, documentation and interpretation, only for it to be dismantled when yet another group of newly arrived teachers replaces the former teachers.
I experience tensions in setting this philosophy within the context of my work at the early learning center in the past 7 years. The first of these tensions ironically did not rest with the transient body of staff but rather rested in the relationships between myself and teachers who had worked in the school for over 30 years, experienced teachers who managed and controlled the children well in traditional and didactic teaching methods, who adored the children and took great pride in their work and achievements. These tensions were faced professionally within a culture of respect and candidness.

After the retirement of the long term locally hired teachers, there are now prevailing tensions with a new body of so called transient teachers (foreign-hired teachers) in the way the staff position their stance on their interpretations of the philosophy of the Reggio Emilia Approach in relation to their work with the children. It is due to these very tensions I experience, born partly due to the transient nature of staff, who might not stay long enough to build upon an evolving culture of research but also to the various cultures and belief they bring with them, that the method of action research is chosen to approach the study. I believe action research recognizes people and their actions are not only caused by their intentions and circumstances, but rather, people cause those very aspects. The method of action research can then provide the significance of reflective and reflexive practice as a quality needed in every educator within the ambit of the research process itself to better understand the relationship between theory and practice to inquire into the meaning, place and practice of assessment in our work with young children.

This chapter will first deliver the approach to the study by looking at action research as the identified methodology. Secondly, the chapter will present the research design which includes
the subjects of the study, data collection, time-line (stages: pilot study; case study), and data analysis. The purpose of the pilot study and the preliminary results of the pilot study will be presented to provide context for the case study and the refinement of the case study plan. Finally, the ethics of the research study and the limitations of the study will close the chapter. The results of the pilot study will be presented in detail in Chapter 4. The case study of a teacher and four children pursuing the concept of color in a year-long project will provide data for the research study which will be presented in Chapter 5.
**Action research as approach to the study**

The aim of this research enquiry is to explore the meaning, place and practice of assessment in early childhood education from a socio-cultural perspective by investigating the relationship between documentation and assessment, and looking at how documentation may foster new ways for learning. Action research is chosen as the key vehicle to inquire into this study as my motivation for this study lies in the belief that the method will involve participants in thinking about and enquiring into their own practice, in conjunction with others and with a commitment to change:

[it is research] conceived and carried out mainly by ‘insiders’, by those engaged in and committed to the situation, not by outsiders, not by ‘spectators’ (although outside ‘facilitators’ may also, indeed, have rather an important role to play) (Winter, 2002, p. 27).

The methodology of action research hopes to provide space for teachers to articulate implicit theories derived from practice and to confront varying perspectives subjected to critique, in free and open professional discourse and makes a point of doing research in an on going practice so that it can be adapted and refined by those who will be most affected by the changes (Carr and Kemmis, 1986; Grundy, 1987).

Methodology as defined by Kaplan (1964) is: “…a meta-level investigation of the limitations, resources and presuppositions of methods, aimed at understanding the process of inquiry rather than the products themselves” (p.23). The methodology which I choose to employ in this process of inquiry in my research enquiry is that of action research to be held as
classroom based research that is, research conducted in the minutiae of a classroom. I wish to locate action research in the kind of reflective practice which aims to improve the realization of values developed with a stress on the process within teachers’ attempts to improve the educational experiences of students.

Action research may be defined as ‘the study of a social situation with a view to improving the quality of action within it.’ (Elliott, 1991, p. 69). Action research is believed to feed practical judgment in concrete situations and I hope to validate the theories or hypotheses generated within action research through practice. I believe educational action research implies the study of curriculum structures from a commitment to effect worthwhile change, not only with curriculum structures but change within participants’ actions and interpretations to view those changes as necessary for the improvement of the educational experiences for students, parents and teachers. However, I do not wish to reduce action research to a form of technical rationality aimed at improving technical skills, utilizing the methodology as a form of hierarchical surveillance and control over practices. Rather, through the methodology of action research, the aim is to provide a conceptual space for teachers to reflect in collaboration with others, and not in isolation, associating their professional development with curriculum development and research putting the learning of the students as a central focus.

It is my hope that through the enactment of action research, this methodology will provide teachers and myself as the participant observer researcher a professional culture which supports collaborative reflection about practice and takes the experiences and perceptions of students and teachers into account in the process. I also like to view action research as a
creative process, based on the thinking of the Reggio educators, to engage in collaborative reflection with all participants which include the children and teachers, on the basis of common concerns which involve the learning of the children, developing a courage to critique the curriculum structures which shape the practices and beliefs of teachers. I believe action research provides such a creative space as we attempt to resolve dilemmas in our self-understandings and aim to develop new ways of understanding the relationship between educational values and our practices. Such a self-reflective process involves educators to clarify the nature of dilemmas evidenced in our practice and the ambiguous self-understandings we manifest.

I interpret the studying of practice to be political in a sense that to study practice is to change it and that standpoint is liable to change through the process of action. I like to hold the view that the individual and the social, the objective and the subjective as related aspects of human life and practice rather than seeing those aspects of practice as dichotomies, and endeavor to understand practice dialectically.

I find in my experiences at the early learning center that often, our practices can be mutually opposed and contradictory, but that these contradictions are necessary aspects of human, social, and historical reality and each constitutes the other. In order to understand how practice is really practiced, and how it is constituted historically and socially, and how it may be transformed if people critically transform what they do to enact the practice, I hold the view that practice has both the externally given objective aspect and the internally understood and interpreted subjective aspect.
Action research as the methodology which I wish to employ is therefore born out of my epistemological and ontological assumptions, that is, the nature of reality and how I wish to find out more about this particular situation rested within a socio-cultural perspective, with a sincere interest to push beyond the comfort zone along with and through all participants involved, which include the children, teachers and myself. Within the tensions I mentioned, I do now seem to have developed a comfort zone resting in the systematic organization of the daily running of the early learning center, where space has been created to give autonomy to the teachers and children, and whilst offering freedom to both the teachers and children, there seems to be more peace in the environmental structure of the center, allowing room for flexibility within the program.

The teachers’ comfort zone, at the same time, seems to rest in their autonomy, to view their work with the children as authentic and meaningful grounded through their method of observation, documentation and interpretation. The children, I believe, wish or appear to wish to be in their comfort zone, unless a more experienced other offers their hand to participate more fully intellectually, physically and emotionally. But what is it that teachers observe in children and how do teachers wish to document their observation and their subjective interpretation of what they observe?; how will this interpretation be reinterpreted with colleagues?; and how will assessment be related to their interpretative documentation? I believe pushing beyond the comfort zone requires teachers to experience severe dilemmas which arise from conflicting elements in their self-understanding of what they are doing.

Action research as a methodology will hope to act as an mechanism for developing thinking and understanding linked to assessment practices from a socio-cultural perspective, inquiring
into the relationship between documentation and assessment, and at the same time, inquiring into how documentation can foster new ways of learning for both the children and adults. The method of action research will provide space to view learning and co-construct the meaning of assessing the learning of all participants as a collective and shared understanding within the early learning center, not as isolated acts of individuals. Perhaps this perspective is the change in the objective condition we wish to observe in our early learning center where teachers have the opportunity to be prompted into conscious self-reflection and change our ways of acting on the external and objective world.

I believe being prompted into conscious self-reflection through the method of action research in this study of meanings and explanations will help attempt to uncover truth which at this stage of study I prematurelly believe it to be the belief in the authentic ways in which teachers assess the learning of young children and the path and process of that learning. I define learning of young children here as that moment in time when a child can make connections with his/her former and present world to the new experiences to make sense of that experience to give it new meaning and understanding. The method of action research as a way for self reflection will also help to view and include the child as an epistemologist, to observe how the child builds his/her cognitive structure through questions and “epistemological whys” where I have observed the investigative behavior of the child equipped with exploratory procedures who is not satisfied with being able to answer initial questions in a project, but prefers to ask more questions which stimulate both adults and children to set out on new and varying adventures of learning. Then, in a sense, as I embark upon such a methodology as a novice researcher, I may perhaps situate my experience on my questions and findings by drawing an analogy with children’s first encounters in learning and
the ways in which the children investigate reality and the world around them. The method of action research through self reflection will aid to focus our intention and responsibility as educators to help the child investigate reality and to consider carefully how we may help his/her desire to grow and develop without being imprisoned in the preconstituted models of summative assessment, for example, check mark benchmark recordings based on programmed formalization. Placing my rationale and context within the early learning center of an international school, every object and every event has a meaning for the young child, which is worth interpreting if we are seriously investigating to understand the meaning of learning and assessing that learning.

The process of documentation hopes to represent and make visible the children as elaborators of meaning who possess investigative behavior, exploratory procedures and research strategies. The competency of the children requires the competency of the adult requiring a reflexive practice in a process of reflection and self-reflection giving human action a fluid character. The method of action research provides space for the teachers to reflect upon themselves, their interactions, their interpretations, their documentation with the child and other teachers critically.

**Documenting the documentor**

Other terms such as 'teachers as researchers', or 'reflective practitioner' (Elliott, 1991) are classified within the meaning of action research, where within a reflective professional culture ‘teacher’ and ‘researcher’ are two aspects of a single role in which teaching constitutes a form of research and research constitutes a form of teaching. Such terms imply
that education is viewed as a dialectical process in which the meaning and significance of structures are reconstructed “in the historically conditioned consciousness of individuals as they try to make sense of their ‘life-situations’…the mind ‘adapts with’ rather than ‘adapts to’ structures of knowledge” (Elliott, 1991, p. 10). Then in my perception within the context and practice of the early learning center, this means that learning of both the adult and the child is viewed as active production where outcomes are based upon intrinsic qualities rather than a match between input and predetermined output criteria, where teachers and young children are provided with opportunities for manifesting and enhancing the natural powers of the human mind.

I like to add yet another term to this system of reflecting the actions and practices of teachers, the concept and term ‘documenting the documentor’, the methodology stemming from the educators of Reggio Emilia (Project Zero, Reggio Children, 2001). As the teacher is called to structure the educational experience as the children’s investigations evolve, and not beforehand, one of the most important abilities of a teacher is knowing how to capture those vital and significant events, as they appear, around which the teacher’s intervention can be organized and shared through the method of documentation. This process is built upon their daily practice and experience of observing the learning in action of children, that is more specifically, the children’s articulations and artefacts they construct. In the methodology of action research, I am proposing a space that can provide the very act of observing and increasing my awareness as director and colleague of the processes that support the teachers’ process of documentation, ‘documenting the documentor’ so to speak, which hopefully will create a culture that supports and calls the teachers to reflect on and discuss their choices and actions, and heightens their awareness in the proposals or actions they make for the children.
As a novice in formal research, such interactions with colleagues will provide challenges and tensions whereby my assumptions may intervene, not necessarily with those of the children, but perhaps with those of colleagues.

**Research Design**

This descriptive study utilizes data from all early learning center staff in a pilot study to initially investigate into the teachers’ understanding and interpretation of documentation as a method for assessing the learning of the children; the study also utilizes data from one teacher and four children in a long term project on color (the Color Project) as a case study to inquire into the ways how documentation may foster new ways of learning and to inquire into the relationship between documentation and assessment.

The subjects of the pilot study include all early learning center staff which include teachers and assistants. The study also includes four children as protagonists in the Color Project in the case study. The teacher in the case study is also a participant in the pilot study.

**TABLE 1**

Demographic profile of adult participants in the pilot study:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Nationality</th>
<th>Educational background</th>
<th>Years at international school in context</th>
<th>Years at other international schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>46</td>
<td>African/UK</td>
<td>Teaching Degree from UK</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>F</td>
<td>36</td>
<td>Australian</td>
<td>Teaching Degree from</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>
TABLE 2

Demographic profile of the children:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>4.4</td>
<td>U.S.A.</td>
</tr>
<tr>
<td>F</td>
<td>4.0</td>
<td>U.S.A./JPN</td>
</tr>
<tr>
<td>F</td>
<td>4.5</td>
<td>Japan</td>
</tr>
<tr>
<td>F</td>
<td>4.6</td>
<td>Denmark</td>
</tr>
</tbody>
</table>

Data collection

The aim of the pilot study is to investigate into the teachers’ interpretation and understanding of the meaning and practice of documentation as a form of assessment. Data collected for this aim in the pilot study include transcripts of the weekly meetings, debriefing notes,
documentation by the teachers (which include transcripts and photos), children’s drawings/work, and a semi-structured interview in relation to diagram 1 (p. 78).
The data collection for the case study through the Color Project include documentation of the teacher conducting the Color Project (which include transcripts and photos), photography taken by the children, drawings by the children, and video footage taken by the researcher.

Weekly meetings attended by all ELC staff which have been in place from the onset of the establishment of the ELC, are scheduled once a week for the duration of roughly one hour. These weekly meetings with all teachers and assistants as participants were utilized and reorganized for the pilot study and case study, leaving daily housekeeping issues as agenda items for morning briefing times before the beginning of school. The weekly meetings were recorded with the help of a voice recorder and transcripts were returned to the participants for verification. As the aim of the pilot study was to investigate into the teachers’ interpretation and practice of documentation, the teachers brought and shared various selections of documentation to the meetings which included such experiences as daily reflections, unit of inquiry reflections, process of clay construction, and the like.

In the case study, the site notes (documenting the documentor) include information about the observations of the interactions between the teacher and the children and the provisioning of the educational environment. The documentation by the teacher in the case study conducting the Color Project is made transparent, available, and shared by all participants to generate comments and insights that contributed to joint rethinking of emerging concepts and directions. This documentation also includes the works (observational drawings, photos, theories) of the four children participating in the Color Project. The documentation, through
the photos, drawings, and transcripts, is also shared with the four children in the Color Project for verification of their ideas and serving as memory; the documentation was used as a springboard for further planning sessions for the teacher with the children. The video footage is shared and viewed by all participants (children and teachers/assistants). The four children involved in the Color Project verbally shared the processes of their experiences with the assistance of a powerpoint presentation prepared together with the teacher with the remaining class of students.

**Time-line**

Stage 1: the pilot study

This stage of the research continued over 4 months from August 2006-November 2006. The researcher attended the weekly meetings held at the early learning center with the aim to investigate into the teachers’ interpretation and practice of the meaning of documentation. This aim was approached by looking closely at the method of documentation in relation to the construction of an individualized portfolio for every student in the early learning center. The method of documentation taking its many forms is a daily practice at the early learning center, and which the accumulated documents are filed into each child’s portfolio, which opened the necessary action of critically viewing the meaning of a portfolio by co-constructing a definition of a portfolio. This action prompted discussion among the participants to investigate further into the method and meaning of documentation and prompted further investigation into the meaning of scaffold by referring to Bruner’s (1980) work on cognition. The portfolio includes a variety of documentation, such as the four units of inquiry articulated in the Primary Years Program (see Appendix 3), ordinary moments
specific to a child or a group of children, cultural presentations representing the international body of students, and project work. As part of this pilot study, the documentation of the teachers undertaking current project work as well as designing projects ‘in the works’ was incorporated into the pilot study outline.

TABLE 3

Outline of the pilot study:

<table>
<thead>
<tr>
<th>Phases</th>
<th>Context and Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weekly meetings after school</td>
<td>To share daily documentation produced by different members of staff</td>
</tr>
<tr>
<td>2. Construction of diagram 1 (see p. 78)</td>
<td>To develop understanding of the relationship between documentation and assessment</td>
</tr>
<tr>
<td>3. Semi-structured interview</td>
<td>To identify the present/current understanding of the practice of ELC staff</td>
</tr>
<tr>
<td>4. Identifying indicators for developing understanding</td>
<td>To observe changes needed/required in practice</td>
</tr>
<tr>
<td>5. Analyzing and reviewing indicators</td>
<td>To identify new areas of development (with reference to Bruner’s work, 1980)</td>
</tr>
<tr>
<td>6. Questions collaboratively framed by all participants</td>
<td>To inquire into notions and understandings of documentation in order to construct a definition of a portfolio</td>
</tr>
<tr>
<td>7. Constructing a definition of a portfolio</td>
<td>To address the collaboratively framed questions</td>
</tr>
<tr>
<td>8. Long-term/short-term projects</td>
<td>To document with intent the learning of children within a group context</td>
</tr>
</tbody>
</table>
Stage 2: the case study

This stage of the research continued over one school year from September 2006 to May 2007. In this research enquiry to inquire into the meaning, place and practice of assessment by looking at the relationship between documentation and assessment, the project work which one participant (a teacher in the 4-year-old class) had embarked upon since September 2006 was selected based on several factors: one, basing the participant’s commitment to elaborate on project work stemming from the previous school year to provide continuity; two, the project work offers the possibility to generate exploration related to the focus of the research.
enquiry; and three, the participant’s identification on the need to strengthen the weaving between documentation and scaffolding (see diagram 1, p.78 above) in the semi-structured interview session in phase 3 of the pilot study.

The participant expressed her commitment to improving her documentation and learning to further understand the concept and practice of documentation. Elliott’s (1991) revised version of the Lewin’s model of action research (p. 71) was helpful in enabling this participant to see the enquiry into the concept of documentation through project work, and its relation to assessment as an ongoing process rather than as a task with a single trajectory.

“What is specific to ‘action research’ as a form of inquiry is that it uses the experience of being committed to trying to improve some practical aspect of a practical situation as a means for developing our understanding of it.” (Winter, 2002, p. 27).

The following tools were agreed upon as methods of data collection (not in order of importance):

<table>
<thead>
<tr>
<th>TABLE 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>teacher’s documentation</td>
</tr>
<tr>
<td>video footage</td>
</tr>
<tr>
<td>informal discussions</td>
</tr>
<tr>
<td>formal discussions based on teacher’s documentation/observation (held prior to conducting the sessions with the children)</td>
</tr>
<tr>
<td>children’s artwork/voices</td>
</tr>
</tbody>
</table>

**Data analysis**
Qualitative data analysis techniques were used to extract themes or commonalities among the participants in the pilot study and case study. Qualitative analytic methods that identified patterns and themes were used to analyze the teachers/assistants as participants’ voices in the discussions in the weekly meetings as well as analyzing the responses to the semi-structured interview in the pilot study. In the case study, qualitative data analysis attempts to deal with the complex network of events and processes of the Color Project, where the researcher studied the participants’ voices (four children and one teacher), looking for emerging patterns, themes, and variables. The variables of negotiation, relationship, non-verbal expression, and verbal expression are identified. A coding system was then developed, and data were sorted according to “families of codes” (Bogdan & Biklen, 1998, p. 171) into context, interaction, outcome. As a particular theme was identified, the researcher looked for consistency across the participants.

**Preliminary Results of Pilot Study**

The Action Research cycle began with an investigation into the teachers’ understanding and interpretation of documentation as a method for assessing the learning of the children. In Phase 1 (refer to TABLE 3, p.77) of the pilot study, the weekly meetings centering on the meaning and practice of documentation by way of sharing individual teacher’s edited documentation of either daily experiences, project work or experiences related to a unit of inquiry from the Primary Years Program of Inquiry, helped to explore the subjective views of the teacher presenting, and to define the value attributed in the teacher’s observation to a particular experience or child.
In Phase 2 of the pilot study, the construction of diagram 1 helped to provide a visual representation to view the relationship between documentation and assessment, to elicit emerging understandings of the beliefs of each participant related to their practice and work with young children in the semi-structured interviews. As a result of the interviews, indicators were identified to focus on changes in practice and to recognize areas of development with reference to Bruner (1980) on the meaning of scaffold, leading to a co-construction of a definition of a portfolio for the early learning center. With the process of building a collaborative understanding on the construction of the portfolio in relation to the meaning and practice of documentation, teachers resulted in being more selective of the focus on what to document through this process, whether in their daily reflections or work to be filed into the child’s portfolio; an understanding evolved among the staff to focus on documenting project work of a group of children as pedagogical, some new as well as reflecting on those already in progress with heightened awareness of the meaning and practice of documentation and its relation to assessment. Further details of the process and results of the pilot study will be presented in Chapter 4.

**Refinement of case study plan**

The Action Research cycle began with the investigation of the teachers’ understanding and interpretation of documentation as a method of assessing the learning of the children in the pilot study. This cycle provided context for the case study to inquire into the meaning, place and practice of assessment from a socio-cultural perspective by looking at how a group of children and a teacher pursue the concept of color collaboratively in a long term project work. The following table outlines the plan for the case study.
TABLE 6

Color Project Hypotheses:

<table>
<thead>
<tr>
<th>Identifying initial idea:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation as assessing the learning of the children</td>
</tr>
</tbody>
</table>

Reconnaissance (fact finding and analysis):
Following the project from the previous year of creating a castle garden, the teacher designs a new project that can support their investigations.

General Idea: Identification of a meaningful context:
Action Step 1: The teacher begins by showing the documentation from the previous year related to the construction of a castle in the piazza area (open communal area) of the ELC.
Action Step 2: The teacher presents the idea of making a garden for the castle

Reconnaissance:
Initial questions to be considered regarding the identified theme:
To what extent will the children to whom we make the proposal understand about gardens?
Can asking them to draw a garden be helpful to the children as a way of focusing on the project?

Amended Plan:
Preliminary lines of observations related to the children’s verbal contributions:
In the first group meeting, it was obvious to the teacher that the concept of gardens was connected to flowers, which then connected to the concept of colors.

Implementation of next action steps:
Modifying the theme:
Noticing the children’s independent research and fascination with colors and the mixing of
colors, the project evolved into a group of 4 children’s investigation of colors.

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Modifying the theme:
Noticing the children’s independent research and fascination with colors and the mixing of colors, the project evolved into a group of 4 children’s investigation of colors.

The action steps outlined in Table 6 make up the initial framework of the ‘Color Project’ as a case study outlined by the teacher, and henceforth, the collection of data will be the documentation by the teacher on the project work carried out with and through the children and teacher, which include site notes, photography by the teacher and children, drawings by the children and video footage.

**Ethics**

As I embrace qualitative methods which are personalized and contextualized, I am made aware that procedures and strategies for protecting individuals from possible misrepresentations and misuses of sensitive data by either myself as the participant observer researcher or other participants which include teachers, students, parents and administrators need to be considered and woven into the research enquiry within the early learning center and need to be discussed with all participants involved.

Our early learning center, operating within the ethos of the Reggio Emilia Approach embodies the values of openness, shared critical responsibility and rational autonomy, and contradictory values such as privacy, territory, hierarchy are minimal. Such activities listed
by Elliott (1991, p. 64) (TABLE 5, p.84) are daily actions embedded within the organization of the early learning center and with which the early learning center operates in a collective and participatory nature.

**TABLE 5**

<table>
<thead>
<tr>
<th>Cross-checking eyewitness accounts of events and observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giving individuals opportunities to reply to accounts of their activities and views, and have these accounts documented</td>
</tr>
<tr>
<td>Presenting alternative descriptions, interpretations and explanations of events and practices</td>
</tr>
<tr>
<td>Consulting individuals about the contexts in which their actions and views are represented and reported</td>
</tr>
</tbody>
</table>

Such a list of activities is not considered as procedures reflecting a compromise with a right to privacy, but rather, are consistent with a right to know based on established considerations of fairness, accuracy and comprehensiveness, promoting trust in the researcher and the value of critical openness within the professional culture of the early learning center.

**Limitations of the study**

Several factors impact the efficacy of the findings from this study. First, the data from the case study are limited to one international school as a small case study and findings may not be generalized. In terms of reliability, the case study is situated particular to the group of children and teacher. What the teacher perceives in one instance with one particular child or the group of children cannot necessarily be generalized to another child or another group of children. However, this school of study is a pioneer in incorporating the principles of the Reggio Emilia Approach in an international school and data from the small case study,
observing the actions and processes of documentation on project work from a socio-cultural perspective, may offer the value of the insights gained as a result of the study in the field of early childhood education in both international and national schools. Second, the experiences of the staff are varied in the field of early childhood education and their responses to the interview questions in the pilot study and input in discussions depend upon their knowledge and experience of the subject (documentation). Given the limitations, data from the pilot study present a rich picture of genuine perspectives of the teachers/assistants as participants to provide context for the case study.

**Summary of Chapter 3**

I embark upon this research enquiry into the meaning, place and practice of assessment in order to enhance learning, that of both children and adults. Action research as a methodology offers a method to help disclose various cultures and beliefs which are professional cultures which include ideological elements but also ways of understanding which evolve on the basis of teachers’ experience of pedagogical environments. The pilot study looks at the quest for meaning of how teachers interpret the meaning, place and practice of assessment as located within the interaction between their professional cultures and practical experiences. This interaction between the professional culture and practice ultimately interlocks with each one’s professional development and learning, and ways of assessing learning of the children. To refine our understanding and practice of documentation as a way of assessing the learning of the children places learning as a central concern of our work as educators and is placed as an on-going goal at the early learning center. The pilot study was thus designed to look closely at the teachers’ understanding and interpretation of documentation in relation to the
construction of an individualized portfolio for each child which compiles and makes visible the process of learning. As part of this pilot study, the documentation of the teachers undertaking current project work as well as designing projects ‘in the works’ was incorporated into the pilot study outline as pedagogically enhancing the search for meaning into the teachers’ interpretation and practice of documentation in relation to assessment. This part of the action research cycle provided groundwork to pursue the theoretical and philosophical understanding and thus practice of the meaning of assessment through a long-term project work on the children’s concept of color as a case study which will be presented in Chapter 5.
Chapter 4

The results of the pilot study

The pilot study is outlined into eight phases as indicated in Chapter 3, with the aim to investigate into the teachers’ and assistants’ understanding and interpretation of the meaning and practice of documentation through the method of action research. This investigation was approached in relation to constructing a definition of a portfolio, whereby an individualized portfolio for each child is produced in the early learning center. This chapter will present the results of the pilot study categorized into eight phases.

Phase 1: Weekly meetings

Key findings:

This phase revealed the diversity of approach by teachers in their documentation showing their views to be subjective and underpinned by individual value judgments. For example, one teacher documented the cohesive and collaborative ways of working of the children, another teacher documented the progressive nature of the conversation held between the children, whilst still another documented the process of one child constructing with clay. Still another teacher captured a moment of a child through photography, with no written explanation, such as a child smelling a flower, or a child jumping into puddles of water after a rainfall.

The findings from sharing the documentation also helped to identify the complexity of the
themes which emerged from the collection of documentation pertaining to incidental moments. The themes varied from a) dispositions of the children, b) interests of the children, c) physical presence of the children, and d) modes of thinking of the children.

Implications for the case study:
This finding showed the importance of ensuring the case study would explore individual difference through in-depth analysis of the teacher’s actions which includes the value attributed to a certain theme in the teacher’s observations of the children.

**Phase 2: Construction of diagram 1**

Key findings:
This phase of the pilot study was a reflective and reflexive phase for the researcher to translate the conceptual understanding of assessment moderation frameworks (Bridging the Gap Open Conference, 2006) to a visual representation in the context of the early learning center by way of constructing a diagram (diagram 1 repeated, p. 89). The terms used in the diagram are described in TABLE 7, p.89. The construction of the diagram revealed the organic approach to the conceptual understanding of assessment in the early learning center. This diagram aided in designing semi-structured interview sessions with the teachers and assistants to investigate into their understanding and practice of documentation.

Implications for the case study:
This finding showed the interconnectedness of assessment moderation frameworks to ensure the case study would explore the connections between various experiences attributed in assessing the learning of children in a group context from a socio-cultural perspective.
TABLE 7

Descriptions of the terms:

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provocation</td>
<td>This term is used within the context of the Reggio Emilia Approach to mean</td>
</tr>
<tr>
<td></td>
<td>the source of inspiration, which may be brought forth by the child or the</td>
</tr>
<tr>
<td></td>
<td>adult, for example, the exploration of colors through the incidental array</td>
</tr>
<tr>
<td></td>
<td>of colors discovered by offering the primary colors of red, blue and</td>
</tr>
<tr>
<td></td>
<td>yellow, the discovery of light and shadow by the natural light reflecting</td>
</tr>
<tr>
<td></td>
<td>on a mirror ball, a walk through a rose garden instigating conversation</td>
</tr>
<tr>
<td></td>
<td>about smells, colors and feelings.</td>
</tr>
<tr>
<td>Conceptual and</td>
<td>This concept includes sources of knowledge such as</td>
</tr>
<tr>
<td>experiential framework</td>
<td></td>
</tr>
</tbody>
</table>

(diagram 1 –repeated)
literature, workshops, the Primary Years Program scope and sequence curricular framework from the International Baccalaureate Organization, negotiating these terrains by giving voice and identity to the children.

**Documentation:** this includes making visible extensively the traces of children’s learning through various methods (i.e. collection of artefacts, photos, scribing voices, etc) as ways of formative assessment that is authentic and relevant to the learning of ‘conversants’ (children, teachers, parents) which questions ways of gauging links which children make, which looks at actions and interactions, and which looks at how teachers will represent the learning of the children, parents, teachers and administrators.

**Scaffolds:** this space looks at the child’s independent level of engagement and capturing the child’s comfort zones through documentation, then to articulate what scaffolds the teachers will provide to push the child beyond the identified comfort zone, to reflect, discuss and clarify what connections do teachers wish for the children to make, to think about how the children will demonstrate these links.

**Weaving:** this concept provides the thread which connects and brings together the entire process of the educational experience which I would like to use the term ‘educational project’, that is the investigation of how children learn and the role of the adult within this educational project. (Professor Luke’s definition of weaving: systematic shifts, shunts, weaves between kinds and levels of knowledge within classroom, across units of work and across projects/rich tasks – from Bridging the Gap Conference, November, 2006)

### Phase 3: Semi-structured interview

**Key findings:**

The semi-structured interview was conducted with all teachers and assistants minus one participant using diagram 1 (p. 78, p. 89). The findings from this semi-structured interview with the teachers and assistants gathered emerging understandings of the beliefs of each teacher and assistant related to their practice and work with young children and elicited views on the meaning of provocation, scaffolds and documentation.
TABLE 8
The following questions are framed by the researcher to help explore practice: (the term model refers to diagram 1, p. 78, p. 89)

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How do you interpret this model?</td>
</tr>
<tr>
<td>2</td>
<td>Which part of the model do you feel resistance, and if so, why?</td>
</tr>
<tr>
<td>3</td>
<td>Which part of the model is inviting to you and you would enjoy?</td>
</tr>
<tr>
<td>4</td>
<td>How do you construct a provocation?</td>
</tr>
<tr>
<td>5</td>
<td>How do you interpret scaffolding?</td>
</tr>
</tbody>
</table>

With reference to the first question on the interpretation of the model (the diagram), all the interviewees expressed positively to the circular aspect of the model, where the areas are interlinked and the interaction with the children is not limited to begin at a certain area but may begin anywhere. There was only one participant who expressed resistance to the terminology used in the model and expressed the model as being complicated. Two participants found all the areas of the model inviting, two participants expressed provocation as inviting, and one participant each expressed scaffolding and documentation as inviting.

The fourth question regarding the construction of a provocation elicited similar views that there are many ways to construct a provocation which includes the environment, materials, meeting times, listening to the children and giving them opportunities to expand on their ideas. To the final question related to the interpretation of ‘scaffold’ also elicited similar responses related to moving the child forward based on the prior knowledge of the child, pushing the boundaries of one’s knowledge. These findings helped to identify indicators to observe changes needed and or required in practice in connection with documentation.

(See Appendix 4 for the result of the interviews in table format).

Implications for the case study:
The process of conducting interviews revealed the importance of understanding the sensitive and demanding task of probing beneath the surface to the personal feelings and experiences of the participants to define their understanding and interpretation of their teaching practice from a socio-cultural perspective. The findings from the interviews showed the importance of ensuring the case study would explore the identified indicators (Phase 4) needed for change and to delve deeper into those orientations through an in-depth analysis of the teacher’s actions in her interactions with the children.

**Phase 4: Identifying indicators: to observe changes needed/required in practice**

Key findings:

Through the semi-structured interview, I analyzed the patterns of the responses and defined three indicators to observe changes needed and/or required in practice in relation to the teachers’ practice and understanding of documentation as a form of assessment:

(a) the interpretation of provocation

(b) the interpretation of scaffold

(c) the meaning of scaffold in relation to assessment.

(a) Interpretation of provocation: the results of the interviews make apparent that provocation can take several forms and may be separated into 3 categories – person, object, and situation.

<table>
<thead>
<tr>
<th>person</th>
<th>object</th>
<th>situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>child and/or adult</td>
<td>e.g. flower</td>
<td>e.g. class meeting, posing question, etc.</td>
</tr>
</tbody>
</table>

These findings helped to establish categories, where the adult is made aware of the many pathways and situations where learning takes place or can be taken. A key element seems to lie in the aspect where the adult views the learning from the child’s perspective, or more
simply put, the adult takes the place of the child and wears his/her shoes and sees the world as the child sees it, a need for the adult to move closer to the child, rather than bringing the child to meet the adult.

(b) Interpretation of scaffold:
The findings showed that although the interviewees expressed their answers in various terms and examples, such as a building and taking the children ‘to elevated steps’, their interpretation on the meaning of scaffold is to do with projection for possibilities, not simplified into formative or summative assessment, but more specifically attuned to the need for studying the possible, rather than the achieved. The findings helped to clarify that this interpretation on scaffold seems to be a necessary understanding for the teacher/assistant in order to extend or expand learning, where documentation may make this process more visible.

Grouping expressions and terms used by the interviewees

<table>
<thead>
<tr>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building from prior knowledge</td>
</tr>
<tr>
<td>Taking children to elevated steps</td>
</tr>
<tr>
<td>Expand the child’s experience</td>
</tr>
<tr>
<td>Pushing boundaries of one’s knowledge</td>
</tr>
</tbody>
</table>

(c) The meaning of scaffold in relation to assessment:
The relationship of the scaffold and assessment is interlinked through and with the process of documentation. One of the observations made by one participant specified the need to look more closely at the weaving between scaffold and documentation, which provides insight into the teachers’ and assistants’ understanding and interpretation of documentation. This finding helped to propose a crucial factor in understanding the meaning, place and practice of assessment as a process using documentation to inform the process of learning of the children and the adult.

Implications for the case study:
The findings showed the importance of ensuring the case study would explore the children’s perspectives through multiple interpretations by the teacher enacted through the method of documentation.

**Phase 5: Analyzing indicators**

Key findings:

The semi-structured interview process helped to elicit the genuine perspectives of the teachers and assistants. This process helped the researcher to define indicators needed for change in practice to further unfold the understanding and practice of documentation by the teachers. As a result of this phase in the pilot study, I am pushed to reflect on my understanding and meaning of provocation and scaffolds, or to scaffold in relation to the meaning of assessment. This process has led me to go back to the writings of Jerome Bruner in his book titled: *Beyond the Information Given* (1980) to analyze the indicators in phase 4 of the pilot study.

Rather than using a measure of the increased effectiveness in performance by some sort of testing task to supply a metric of progress, Bruner (1980) writes of 4 criterion viewing closely the psychological process involved in growth, and thus change, and of the cultural conditions that shape such growth.

**TABLE 9**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Characterizes the operations of the mind in some formal and precise fashion. (e.g. description of what the child has done when he/she is thinking through or thinking about a problem, like putting together a jigsaw puzzle)</td>
</tr>
<tr>
<td>2.</td>
<td>Taking into account the natural ways of thought, ones that seem ordinary and intuitively obvious (e.g. a child playing with his/her shadow)</td>
</tr>
</tbody>
</table>
3. Taking into account the nature of culture in which a human being grows. Bruner defines culture, among other things, as a system of techniques for giving shape and power to human capacities, where the values, tools, and ways of knowing a culture equip its members.

4. The fourth criterion, rather than a criterion, is expressed as a spirit of hope, to ask ourselves whether we have contributed to our understanding of ‘how to educate’ to the point where the child can use his/her intellectual heritage to the full.

To further conceive of the growth of the intellect, Bruner (1980) offers the idea of representation as a useful concept. Representation, or a system of representation, is defined as a set of rules in terms of which one conserves one’s encounters with events (p. 316).

**TABLE 10**

A representation of the world or of some segment of one’s experience is seen as having several interesting features in some medium:

<table>
<thead>
<tr>
<th>Enactive representation</th>
<th>Iconic representation</th>
<th>Symbolic representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>By action - knowing something through doing it</td>
<td>By some form of picture - knowing something through a picture or an image of it</td>
<td>In words - knowing something through some such symbolic means as language</td>
</tr>
</tbody>
</table>

These sub varieties of representations, seen as operative during the growth of intellect, provide a framework to analyze the indicators in phase 4 of the pilot study related to the interpretation of provocation and scaffolds by the teachers and assistants.

Implications for the case study:

Analyzing the indicators showed the importance of ensuring the case study would explore the
documentation of the teacher to focus on assessing the growth and change in learning of young children through representation as ways for teachers to scaffold learning. Furthermore, the analysis of the indicators showed the importance of ensuring the case study would explore growth in learning as empowering of the individual by multiple means for representing the child’s world and to view growth of the intellect not as a series of stages, but rather, as successive mastering of the three forms of representation (enactive, iconic, symbolic) along with their partial translation each into the others.

**Phase 6: Questions collaboratively framed by the teachers**

Key findings:

The pilot study aims to investigate into the ELC staff’s understanding and interpretation of documentation and was approached in relation to the construction of a definition of a portfolio. The findings in this phase show that the teachers began with a series of questions related to documentation, rather than focusing on questions related to the portfolio as the documentation produced and gathered by the teachers compile the portfolio.

**TABLE 11**

The following are the questions the teachers/assistants asked each other:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>why do we document?</td>
</tr>
<tr>
<td>2</td>
<td>what do we document? (taking into account Bruner’s theory of intellectual growth)</td>
</tr>
<tr>
<td>3</td>
<td>who is the documentation for?</td>
</tr>
<tr>
<td>4</td>
<td>what do we want to use the documentation for?</td>
</tr>
</tbody>
</table>

Implications for the case study:

This finding on constructing questions related to documentation showed the importance of ensuring the case study would approach the concept of documentation from both pedagogical
and philosophical viewpoints; that is, pedagogically, to view the practice of documentation as a learning process to observe and listen to children and philosophically, to also listen to oneself, to others and with others.

**Phase 7: Constructing a definition of a portfolio**

Key findings:

The findings from the discussions and responses to the questions initially were consistent; the reason for documenting was to communicate the process of the children’s learning in action alone and with others; the teachers wished to document planned and informal experiences; the documentation was for the children, parents and teachers; and finally, the teachers wished to use the documentation to give visibility to the creative, intellectual, and imaginative powers of the children.

This phase also revealed the tensions of documentation, such as the time involved and the stress factor. More questions were raised such as: ‘why are we devoting so much time to documenting? Children do amazing things all the time, but it is necessary to document everything and every moment? What amazing things are they doing with us or in spite of us? Is what we document pedagogical?’ (transcription from voice recorder). The following emerging themes were identified from the discussions:

<table>
<thead>
<tr>
<th>TABLE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality versus quantity</td>
</tr>
<tr>
<td>Time factor</td>
</tr>
<tr>
<td>Documenting well for what?</td>
</tr>
<tr>
<td>Blind faith creates totalitarianism</td>
</tr>
<tr>
<td>Being selective about what to document and give the documentation a focus</td>
</tr>
<tr>
<td>Documentation of learning, with us or in spite of us?</td>
</tr>
</tbody>
</table>
Situate learning with what’s going on at ELC

Hidden constraints*

Underlying messages**

Pitching the learning higher/scaffold/ZPD

* to compile individualized portfolios; aesthetic presentation; editing process; parents’/school’s expectations; conforming (or not conforming) to teaching partner’s level/style of expectation.

** do Reggio educators experience the same emotions? Do I believe and value what I am doing? Do we have the support system in place?

This set of data provided impetus to move the teachers’ discussion on the construction of a definition of a portfolio. Whereas the written report sent out to parents two time per year can provide an individualized account of the child’s participation and growth in learning, the portfolio supports the individualized written report by visually offering the child in action (through photos, videos, etc) in the process of learning as a member of the group. The teachers and assistants then moved to co-con structing a definition and meaning of a portfolio with an aim to develop a collaborative understanding on the meaning, purpose, and practice of documentation:

Based on social constructivist principles, the value of portfolios is to display students’ growth/development in group learning situations, that is, each person learns autonomously and through the ways of learning of others, including all three: prior knowledge, formative and summative. The portfolio displays that groups can provide a powerful context for learning including adults, where much of the learning occurs in group settings. The portfolio does not only focus on individual performance or achievement, but rather, portrays a collection – a collection of how persons are emotionally, intellectually, physically, creatively, and aesthetically engaged and influence each other in solving problems, creating products, and making meaning.
(See Appendix 5 for detailed accounts of the portfolio).

Implications for the case study:
This finding showed the importance of ensuring the case study would explore the overarching problematic issue of documenting as a form of assessment from a socio-cultural perspective which involved the time factor and the possibility to ‘lose’ and share the actual moment with the child/children as it is occurring because one may be so occupied in the act of documenting the moment.

**Phase 8: Project work**

Key findings:
This phase revealed an understanding by the teachers regarding the documentation of project work as pedagogically focused on children learning in a group context, some new as well as reflecting on those already in progress with heightened awareness of the meaning and practice of documentation and its relation to assessment.

Implications for the case study:
This finding showed the importance of ensuring that the data collected from one sample of such a project, named ‘the Color Project’ as the case study would explore the meaning, place and practice of assessment through the method of documentation as an in-depth analysis of children learning in a group context from a socio-cultural perspective.

**Conclusion**

A key challenge in the phases of the pilot study was to create a process that would enable the
teachers and assistants as participants in the study to make meaningful insights into the notions of documentation to enact changes in practice. The teachers and assistants as participants therefore needed to be able to recognize the reality of their own starting positions in terms of their thinking, behavior and attitudes to the concept of documentation. Action research provided a method to create the processes of the study based upon one of its basic ideas for the need to create:

“A constant interplay between our principles – hearing a wider range of voices, social justice, greater humanity, greater reverences for our precarious earth, along with desires for more technical efficiency, etc. – and our practice.” (Noffke, 2002, p. 22).
Chapter 5

Data - ‘The Color Project’

A Framing Narrative

The data collection is set out in a story format to present how a group of 4 children (ages 4.0-4.4) and a teacher embark upon a path of learning together to explore the concept of color, which will be identified as the Color Project hereafter, during the school year from September 2006-May 2007. The genesis of the story, in actual fact, started the previous school year (September 2005-May 2006) when one corner of the central area of the early learning center, known as ‘the piazza’, was transformed into a castle by the 4 year old class. An idea to add a garden around the castle was born in the 3 year old class that year, but an idea only in transition, which unfortunately did not come to fruition. Their idea of adding a garden was revisited the following school year with the children coming up from that class, where the documentation on the process of the construction of the castle from the previous school year, serving as memory, informed the teacher’s choice to design a learning context for this newly formed group. A group of 4 children, 3 girls and 1 boy, was so formed to pursue the idea of creating a garden around the castle, which as the story unfolds transforms into the Color Project.

The documentation on the construction of the castle from the previous school year (2005-6)
was shown to the group of 4 children with a purpose, not only to recall past experience, but to also create a sense of shared understanding in the present. The members of this group, or rather, the members of this learning group (Project Zero, Reggio Children, 2001), include the adult as well as the children and the focus of learning in the learning group extends beyond learning of individuals to create a collective body of knowledge, a socio-cultural approach to learning, where the experiences shared by the group form a co-construction of knowledge.

I make an informed choice to present the data in story form in an effort to keep true as much as possible when working with young children to the pace and fluidity of the children’s thinking, listening carefully to what they are really trying to tell us through the Reggio methodology of documentation. The data come from the video footage taken by myself taking the role of ‘documenting the documentor’, (or an active participant observer), whereby the video encompasses the full range of the actions and voices of both the children and the teacher, with the dual nature of myself being in presence of the actual actions taking place.

The documentor, who is the teacher, documents the process of the Color Project through the methods of photo taking and transcribing the voices of the children in her discussions with the children. Informal and formal discussions as data are held with the researcher as a result of the teacher’s documents, which also include the children’s artifacts. The story as data is presented in 6 phases (see p.104), some phases lasting longer than others due to the nature of the inquiry pursued such as the seasonal change of colors in the environment, and some phases overlapping with each other such as making connections of color words with experiences based on visiting different parks, as learning never seems to be neatly formulated as linear, but in fact, rather ‘messy’ if you will, each phase affecting the actions to be taken,
as well as reflecting on the past actions, which will inevitably affect decisions for future actions. Each phase adding pages to the story as a whole is distributed and stretched across places, people and time and aims to present and clarify the story as data with a cross reference to the steps outlined within the methodology of action research, following the cycle of identifying the idea, reconnaissance, taking action, reconnaissance, amending the plan, and implementing the next action.

In this story, Phase 1 is an introduction which devotes to the necessary act of collecting data based on discovering the prior knowledge of the children related to colors and the mixing of colors. This phase provides a lens to view the basis of the children’s interest and knowledge in colors. In this phase, the teacher (and myself, with a role to document the documentor with the use of a video camera) listen to the children’s voices as a way to ‘nurture the soil’, so to speak, to nurture the children’s theories with care in order for the theories to develop where learning occurs within the social relationship between the children and adult.

Phase 2 examines the color preferences of the children in the learning group which the children offered to share in the discussions which were held in Phase 1. This phase of the story is stretched across time as the teacher investigates the possible relationship between changes in color preferences and changes in the environment, as well as investigating the possible relationship whether experiences in the environment may sensitize children’s expressions and preferences of colors.

Phase 3 looks at the mediational means of expression of the children broadly differentiated into verbal and non-verbal expression. This aspect of data collection in the story is grounded
in the principles of the Reggio Emilia experience nested within the metaphor of ‘the hundred languages’ of children, attempting to create the pleasure and necessity of communication through multiple ‘languages’ (literacy).

Phase 4 conceptualizes ‘the hundred languages’ as a continuum or a range, with aesthetic at one end and efferent at the other to gather data with a possibility to view how the verbal expressions may be enhanced through the children’s non-verbal experiences.

Phase 5 is presented in a diagram format to follow and present the strategies the children take on their process of creating colors.

The final stage of the story in Phase 6 records the culmination of the entire process of the Color Project portrayed in the form of an exhibition held within the grounds of a public Japanese park. This experience provides an opportunity to interact with the wider community and gathers data by sharing and exchanging varying views on the image of young children through viewing the exhibition and providing feedback by writing in the visitors’ book.
The Story

Prologue
September 29, 2006
The story begins and learning unfolds with the teacher posing a question to the children in the learning group: “Do you remember your idea about making a garden around the castle?”

4 children come together on this day for the first time, 3 girls and 1 boy, coming together as a learning group. The children are asked to come together as a group by the teacher, based on her daily observations – Child 1 as a result of the child’s abiding interest in flowers, Child 2 for the child’s ability and agility in verbal contributions, Child 3 for the child’s skill in drawing, and Child 4 as a way for the child to express artistic potentials and the need for the child to be able to belong and participate in a group. The children, except for one child who is new to the school, recall the idea about making a garden around the castle.

Teacher: what do you think about the garden? Do you have any ideas about what a castle garden should look like?

Child 1: a flower…yellow and blue
Child 2: green and blue…I mean blue and yellow to make green

Teacher: so are you thinking about mixing your own colors?
In this initial dialogue, the concept of ‘garden’ and the children’s understanding of gardens is connected to flowers, which instigates through conversation an interest in colors and mixing colors. The idea of constructing a garden is put on hold and the amended plan as implicit
negotiation between the teacher and the children becomes an inquiry which is modified to pursue an interest in finding out about the children’s concept of color.

**Phase 1: Data on prior knowledge (September – October)**

The root of the Story begins in August 2006 during the first days of reconvening school from the summer holidays. Paint, as a medium, was chosen with intentionality by the atelierista (studio teacher) to explore the ways in which children interact with the concept of primary colors to foster discussion amongst the teachers and parents (through documentation) about the ways to frame useful descriptive responses to bear on young children’s interests to develop their repertoire of verbal and visual range. The 4 children in the learning group evidently explored painting with the primary colors from August initially with the atelierista and further explored out of their own choice during their free exploration time (a time where children freely explore areas of interest both inside and outside of the classroom space) and experienced the element of surprise mingled with joy at the discovery of new colors appearing on their sheets of white paper. One particular child’s response from the learning group included expressions as “awesome!” “I made orange!” and “I can’t stop thinking about colors!”

Thus, when the learning group came together in September, perhaps the formation of the group provided an inopportune time for the 4 children to share with pleasure their knowledge on the discovery of making colors. Their knowledge can be seen as somewhat limited from an ordinary eye of an adult, but their discovery is immense and limitless from the child’s
perspective, to have found a way to make a another color, a different color, where their experiment with mixing is immediately recognized, fulfilled, gratifying and thus successful, as much as any great scientist makes a new discovery.

In their first meeting as a group, the children mention flowers for the garden, and other ideas as stones and a lion. However, the children’s interest in colors take over any concrete ideas suggested for constructing a garden. The children make effort to recall the combination of primary colors, names they have come to know well through their previous experiences and explorations with the atelierista. With the amended plan to modify the inquiry to the concept of colors rather than focusing on the concept of gardens, the teacher discovers in the sessions to follow that the children are not inhibited to suggest a variety of wild and imaginative combination of colors.

Child 2: “how would you make pink with pink?”
Child 1 replies: “purple and white would make pink”
Child 3 adds: “pink and red…different color…”
Child 4: “purple, blue, pink”

The children offer questions such as: “I wonder what blue and red make?” and confirmation such as “…if you put yellow and yellow it wouldn’t make any color”. There is also negotiation on theories to create a certain color, such as in this dialogue:
Child 1: “pink and red makes purple”
Child 3: “I think make purple is blue and purple”
The reconnaissance stage of action research at this point, shifts to whether asking the children to make predictions about mixing colors be helpful as a way of focusing on possible problems and negotiating ideas, and whether such a focus will enable the children to face possible problems with a greater degree of awareness. The teacher listens to the children’s contributions and welcomes the predictions and confirmation, with no right or wrong answers given. The action to welcome the suggestions may be perceived as a way to scaffold the children’s learning. In this way, the action step to provide and give attention to the possibilities of new creations is thought best to sustain the level of interest, engagement and focus of the group. In this phase the act of active listening provided the adult with prior knowledge and interest of the children, and further, provided a non-threatening climate for one child to quietly offer the suggestion of mixing white to a primary color. It is interesting to note, and whether significant or not, that the colors, other than the primary colors, most mentioned in the discussions included pink and purple.

**Phase 2: Data on preferences (October – April)**

Color preferences or colors that the children are attracted to are discovered and disclosed in the first meeting with the children as a group:

Child 1: pink and white
Child 2: green
Child 3: purple and red
Child 4: pink

It is noticeable that there are similarities and differences in the children’s preferences of
colors. In the next cycle of action steps, the teacher wonders whether the children’s preferences of colors will change and/or grow in choices they make with varying experiences, and if so, what elements and factors may cause the changes or what elements and factors cause the children not to change. This phase of the story is stretched across time and places with the teacher’s decision to use the natural environment as experience and element to investigate and inquire the children’s attraction to, and thus perhaps preferences of colors. The action steps are taken with care, mindful to be open to negotiations of ideas which may take place, in an effort to sensitize the children to colors in relation to their immediate outside environment in the form of visiting different parks, namely, the Rose Garden (September) located behind the early learning center building, Negishi Park (November), an open area park with hills of grass, a pond, and numerous trees (mainly cherry blossom trees), and Sankei-en Gardens (December and April), a Japanese style garden with a huge pond, historical temples and tea ceremony houses, aged old ghinko, maple and cherry blossom trees, bamboo forests and numerous types of flowers as hydrangeas, azaleas, to name a few.

Living in a city, it becomes necessary for the adult to design learning contexts which provide opportunities for young children to interact with natural resources whenever possible. In October when the children visit the Rose Garden, three of the children are religious to their preferences from the first encounter as a group. Child 1 finds attraction in pale tones as white and pink, Child 2 moving preference from a definite green to a combination of colors in a single flower, Child 3 to the purple petunias, and Child 4 to a merry looking pink rose bush, a cluster of the same color, as opposed to a single flower and color.

The fall season brings on a delightful provocation as the leaves change colors turning into
vivid yellows, oranges, reds and browns. But here, the provocation is not to stunt the children’s learning with preconceived notions of learning about the seasons, or to make fanciful artwork with fallen leaves, but rather to observe how the children will interact with their natural environment in relationship with their peers on the notion of color. It was noticeable in the first visit to the Rose Garden how Child 2 observes colors in a single rose, not just one color, but a combination of colors. This child, before the color change of leaves in November, discovers a purple leaf, whereby the notion that a leaf is not always green, brings about a new enlightening experience, a new discovery in relationship with the environment. In the months to follow from October through December, this child endlessly collects fallen autumn leaves, paying close attention to the myriad of colors in a single autumn leaf, whereby the child’s preference from green transforms into colors of brown, yellow, red, purple and orange.

The other 3 children do not change their preferences. Neither do the preferences of the other children seem to have little effect on changing their own preferences. However, the teacher observes and takes note of the children’s appreciation of varying colors in the natural world surrounding them by paying close attention to the joy in their facial expressions, their tone and pitch of voices, and their eager gestures to share with others their collection of flower petals and fallen autumn leaves. This was noticeable in the cycle of action steps taken in visiting the different parks throughout the year, the end of summer in the Rose Garden, the fall months to Negishi Park, and to Sankei-en Gardens, both in fall and in spring. In the story to follow in Phase 3, the children’s depiction of colors through the camera lens on their visits to Sankei-en Gardens takes on another dimension.
Phase 3: Data through mediational means (September – April)

When I write of mediational means, I refer to Vygotsky’s (1978) theoretical implications on how humans master themselves through external symbolic, cultural systems rather than being subjugated by and in them. The mediational means in the context of the Color Project can be broadly differentiated into linguistic expression and non-linguistic expression. In this phase of the story as data collection, linguistic expression encompasses the verbal expressions and utterances of the participants. The non-linguistic expression encompasses the poetic languages, exemplified in the metaphor of the ‘hundred languages’ by Loris Malaguzzi, which includes in this particular project the graphic and symbolic languages of drawing and painting, as well as the poetics of the digital and of gesture.

The English language is used as the verbal medium of instruction and communication. However, although all participants speak and understand English, the fluency of the English language of the participants lies on several layers and interpretation. Comprehension of verbal expressions have varying degrees of understanding, as only one member of the group (apart from the teacher) is a native speaker of English. As this study is conducted within an international school setting, the other 3 children are non-native speakers of English and are bi-lingual students, coming from varying cultural backgrounds. A simple word as ‘cookie’ can evoke a wide range of images, thoughts, smells, tastes, etc. stemming from the cultural heritage and history of each child. In a context such as this, the notion of the ‘hundred languages of children’ holds an evermore deeper threshold of meaning and lends itself to allow flexibility and possibility of expression which may be visible, shared and interpreted to be understood by others, a way to listen to others and other worlds. With such a perspective,
the poetic languages have the possibility to hold together the rationality, imagination, and sensitivity of each child’s cultural interpretation of ideas, thoughts and meanings.

Therefore, throughout the entire process of the Color Project, implementing the action steps based on the metaphor of the ‘hundred languages’ was set in place, but always in consultation and negotiation with the children, confiding in their desire to participate through the symbolic languages.

In the following images to follow, the kinds of mediational means identified include a) image drawing, b) observational drawing, c) photo depiction, d) tracing with the use of light and shadow, e) painting, and f) gesture. One must also realize the hidden aesthetic languages embedded in the mediational means, that of sound, of silence, of feeling.

a) Image Drawing: The following show the very first depictions of each child’s image of a garden when the teacher asked them to conceptualize a garden. One notices the portrayal of flowers in every drawing:

image drawing by Child 1
b) Observational Drawing: The second series of drawings depict images of their favorite flower from their initial experience of visiting the Rose Garden. This experience of drawing was a combination of two languages, the first being the digital language, taking a photo of their favorite flower with a digital camera by themselves, and secondly, followed by an
observational drawing of the flower from the actual photo taken by each child.

observational drawing by Child 1

observational drawing by Child 2

observational drawing by Child 3
c) Photo Depiction: The following photos, excluding the one beneath, are photos taken by the children on their visits to Sankei-en Gardens in the fall and in spring.
Through the series of photos taken by the children within this cycle of action steps, the teacher observes the children’s attraction to subtle and earthy colors such as earthenware and stones, as much as the colorful, vibrant colors represented in dandelions and the carp.

d) Tracing with use of light and shadow: There is confinement to time to follow and revisit all the ideas of the children and the teacher. With the pathway leading to a focus on colors, the construction of a garden in the piazza was necessarily put on hold, but the children’s initial idea on flowers is respected to create a collaborative mural instead. The two photos to follow depict images of the children’s arrangement and layout of the flowers from their original observational drawings of flowers to construct the mural and the process of tracing the images of the drawings with an overhead projector.
e) Gesture: The mediational mean of gesture, embedded in the children’s subtle actions in silence, fleet by at times unnoticed by the adult, for example, holding a basket together and sharing the anxiety and excitement of the unknown venture together, or the embracing of beauty ever so gently cupped in the warmth of their hands.
f) Paint: Paint as a mediational mean, and the children’s invested curiosity in the concoction of creating colors through this mean.
g) Painting: Finally, painting as a mediational mean, as a way of expressing the children’s ideas.

**Phase 4: Data of verbal expression/language of colors (October – February)**

At our early learning center in our work with the children, we encounter more than a hundred languages, perhaps. In this phase of the story, the teacher and I reflect on the need to invoke the metaphor of ‘the hundred languages’ in conversation of our educational endeavors to enhance our understandings about what literacy means in the Reggio Emilia Approach. From the beginning of the project, the children are well versed in naming the primary colors of red, yellow and blue and the secondary colors of purple, orange and green. However, it is evident through the conversations with the children that even with varying degrees of density and intensity of the primary and secondary colors, the colors all come under the heading of the above mentioned 6 names, with very little use of a variety of words to describe colors.

The underpinning methodology of the Reggio Emilia Approach does not privilege a certain
language over another. Rather, it treats all modes of communication equally, as observed in phase 3 of the story. This does not mean that academic literacy, for example, is relegated and that we treat the language of light or colors, for example, with more focused attention and esteem. And thus, if we conceptualize ‘the hundred languages’ as a continuum or range, we might say that a Reggio pedagogue moves back and forth along this range with the children, shifting into and out of different spaces of communicative strategies and events, frequently striking contrast. In this story, this phase does just that, collecting data by alternating stimulation and heightening sensitivity for languages through transporting literacies of diverse derivations. This phase looks at how the different mediational means - paint, natural resources, man-made resources such as color blocks, peers as resourceful mediators, and finally connecting color and artifacts with intentionality, may influence and help thread and weave a tapestry of words rich in description.

Through the mediational mean of paint, and with the introduction on the concept of mixing colors with tempera powder paint, the action steps taken were to look and listen carefully at the kinds of words children use to express similarities and differences in color. Through this cycle of listening, a pattern seems to emerge in the ways children recycle words. For example, a repertoire of words emerge to explain colors more specifically to a question such as: “how would we make purple?” to which Child 1 responds: “maybe like you should mix pink and purple and make more dark pink and purple”.

A bouquet of flowers with different shades of pink and purple (definite preferred colors from the previous sessions), and other colors as white, orange and green, is placed on a table as a
provocation to enter the group into dialogue about colors. From this provocation another pattern of words emerge in the children’s responses to describing colors:

Child 1: “the flowers are beautiful because there are lots of colors…all sorts of colors”

Comparisons between similar colors are made:
Child 2: “(comparing two purple tones)…it’s kind of darkish”
Child 3: “(comparing two pink tones)…it’s lighter”
Child 4: “(comparing two pink tones)…it’s darker”

The next set of action steps taken were to present the children with a set of blocks with varying hues and tones of colors. This step acted as another provocation with an attempt to find out what other descriptive words may be elicited from the children:

Child 1: “(pointing to the pink shades)…a little bit light…they belong together because they’re little bit same”
Child 1 continues: “these are a little bit light and these are a little bit dark”
These expressions of Child 1 stimulate Child 2 to announce: “this one is white peach”

The blocks offer a way for the children to group hues and tones, grading them by shades and giving the groupings a shared new word: “color families”, whereby the children arrange the color families from light to dark shades and vice versa.

With added opportunities to work with the blocks grouping them into color families, other words appear:
“little bit purple”
“greyer”
“these two don’t go together”

Peers as resourceful mediators within the context of social constructivism act as powerful stimuli to scaffold learning. The teacher elicits ideas and thoughts from other members of the class during a class walk to the Rose Garden by asking: “what color (name) could we give to this flower?”

Child A: “strawberry”
Child B: “cherry”
Child 2: “boys colors are white and yellow”
Child A: “the white roses smell like ice-cream”

A pattern to associate food to color is observed in this experience.

From this experience on connecting color to food as artifacts, during the visit to Sankeien Gardens in December, one child from the Color project group makes a connection with the color of the jacket to the color of the maple leaves by naming the maple leaf color as: “jacket orange” and the whole tree was given an identity as the “orange jacket tree”.

This connection necessitated the teacher to take action steps that would endeavor to construct enriching descriptive words from the children. With this motive in mind, the teacher decides to offer sensory experiences of touch (soft fabric, pearl necklace, charcoal, silver ball, etc) and taste (mango, cranberry, marshmallow, apricots, green olives, strawberries, cheese).
Through and with these experiences, the learning group of children create the following words:

White wall white
Lights off black
Tea green
Soft cool sky blue
Silver shiny reflection
Leaf green
Gold light
Cold gold
White gold
Shiny gold
Peachie peach
Pinkie pink dark
Lipstick dark pink
Sun yellow
White sand
Shiny pink
Plum
Shiny light

This initial data set of names created by the children are recorded in writing with the children. These names are later matched with the colors the children eventually create.
Phase 5: Data on the concoction of colors (January – February)

In this phase of the story, the teacher and I reflect on the delight and tension between process and product. Reflecting on the children’s initial theories of creating colors, we ask ourselves questions: “do we confine the children to their original theories?” “How shall we best draw on documents by the children and teacher to shape the processes of learning, to frame these trajectories?” “How can we respect the children’s emerging ethos in relation to our framing narratives?” “How can we best intertwine the stories and strands of the past and a present engagement with an orientation towards the future to form spaces that include the language of colors, of bodies, of nature, of description, of narratives?” The action taken as implicit negotiation is to leave the experience of creating colors open to the children, keeping the focus of the project, not as an experiment to test whether their theories are proven right or wrong, but rather to focus on providing space to create imaginatively without inhibition, including the element of accidental discoveries and surprises, in order to create a myriad of colors.

36 clear jars are collected to begin the task of creating colors. With the co-constructed knowledge of adding white to lighten a color and adding black to darken a color, the colors of white and black are first created. After this initial procedure, each child develops a strategy as process to create colors.

Child 1: - creates a standard red color
- then in another jar mixes the standard red and yellow powder paint to create orange
- in different jars continues to create shades of orange by mixing the orange with the
standard red or
- by adding yellow tempera powder paint to the orange

In this process, Child 1 creates 5 jars of paint, all in shades of red/orange

Child 2: - creates 3 primary colors first
- mixes all three colors to create brown
- adds drops of black to different jars of brown to create different shades of brown

Child 2 repeats the final process with different jars to create a variety of shades of brown,
adjusting the intensity of color by the amount of drops of black paint

Child 3: - creates a standard blue
   - then mixes white and standard blue in another jar
   - then mixes the above color with white in another jar

Child 3 uses a systematic strategy to create 4 shades of blue

Child 4: - creates standard red and standard blue
   - mixes red and blue to make purple
   - mixes either red tempera powder paint or blue tempera powder paint directly into new jars of purple to create different shades of purple
Phase 6: Data from the exhibition (April-May)

The children are provided with digital cameras as our ongoing attempt to provide experiences based on the metaphor of the ‘hundred languages’ on their two visits to Sankei-en Gardens, one in December and the other in April, to take photos of their choice, but with an understanding to look especially for varying colors. A few of the photos taken by the children are documented in Phase 3. The photos taken by the children struck the adult eye with new found images of the world as the children see the world, a lens into not only what sorts of images the children are attracted to, but also a lens into the hidden strengths of the children themselves. Sankei-en Gardens accepted with open arms our proposition and the possibility of the idea to hold an exhibition of the children’s photos, and offered the use of Tomyoji, an auspicious 15th century temple recognized as a National Treasure.

The underlying meaning of an exhibition is perhaps no different from any other, as space to exhibit, to show the works, any kind of works, produced by human beings, or by natural causes, open for interpretation to any visitor and viewer. In the works of adults, often there are hidden dark cleavages, whereas in the works of young children, there are no hidden cleavages and instead represent messages of openness, optimism, humor and possibilities.
Some works in exhibitions are produced with the preconceived idea and notion of holding an exhibition, sometimes with even a theme attached. The learning group had no such intention and thus the exhibition of the learning group was simply a celebration of their works. The exhibition is, without a doubt, for the children, but the process of putting together the exhibition, which is no easy task, provides the teacher with the opportunity to reflect on her role as a teacher, what it means to be a teacher, with endless and open possibilities for learning.

The exhibition is opened to the public. It is our hope that taking this action will give us an opportunity to reflect on the meaning and purpose of an exhibition being mindful and sensitive to the kind of message(s) which will be communicated and interpreted by the public. A visitors’ book is placed on the exit route of the exhibition, where visitors may have the opportunity to write any thoughts or messages after viewing the works of the children (see Appendix 6 for full transcript). This collection of data helps to determine the kinds of images adults have of young children, where values are placed and each of the adults’ place and space in their past and present time.

The following is a sample of the words (translated) written and recorded in the visitors’ book:

“what beautiful photos!”
“I am astonished seeing so many beautiful photos...[the photos] cannot be depicted from an adult’s point of view”
“I am reminded of all the joys of childhood I experienced. Thank you for this beautiful ‘time’”.
“I remembered all the places I used to like as a child. I remembered the sense of excitement I
felt as a child of the ordinary moments. Thank you”.
(See Appendix 6 for full transcription/translation)

**Conclusion**

The idea to present the data as a Story is an effort to communicate as much as possible that the children and the teacher are the protagonists of the project and processes and to remain true to the children’s thinking and their path of learning together with the teacher. It is a hope that through the Story as data, space can be created to provide a dialogue between pedagogy – a formal, technical one with adisciplinary way of thinking – and the metaphor of the ‘hundred languages’ – which bring in creative thinking that confronts things in versatile and divergent ways. The data of the Color Project as a Story hopes to portray the children, not only as participants, but themselves as producers of culture where they are given the opportunity to elaborate interpretations, in their search to give meanings to things, and also to produce new meaning.

**Data Analysis**

**A Framing Narrative**

The qualitative data analysis in this section attempts to deal with the complex network of events and processes in the story (as data) through retrospection, ‘configuring the events in such a way that their part in the whole story become clear’ (Polkinghorne, 1988), with an aim to show that the story is not capricious, but include underlying variables, and that the variables are not disembodied, but have connections over time. The variables of *negotiation, relationships, non-verbal expressions, and verbal expressions* are identified through the data,
which are divided into 3 assigned units of meaning: context, interaction, and outcome. This method of coding as data analysis hopes to differentiate as well as combine the data through reflection which constitutes as outcome. To present the data analysis with clarity is a challenge: firstly, the collection of data and analysis are interwoven, and secondly, the analysis is an ongoing enterprise which moves back and forth between thinking about the data as collected and generating strategies for collecting new data which in turn generates new insights into the story through the methodology of action research. Each of the variables (negotiation, relationships, non-verbal expressions, and verbal expressions) will initially be presented in table form, preceded with a commentary for explanation. Following, the analysis will be further articulated relating the variables through reflection to the methodology enacted for this research enquiry.

**Variable 1: Negotiation**

In our work with young children we try not to be didactic in our approaches but rather build an environment that is filled with opportunities for both the children and adults to generate many questions and search for ways to clarify them because when we talk or write about a group, we are actually talking about individuals who come together with a common objective with a desire to participate, but the group does not necessarily follow a single rhythm – there are ruptures (or tensions) in the cognitive, relational or empathetic rhythms, where negotiation between the individuals or the group, implicit or explicit, becomes necessary for the group as a whole unit to move forward in their inquiry. In the learning group of the Color Project, negotiation occurs in all 6 phases of the story, often observed on 2 tiers but occurring at the same time, that of negotiation between the teacher and the 4 children, and the other
being the negotiation between the children.

Tier 1 (Negotiation between the teacher and the group of children)

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: inquiry to pursue</td>
<td>Teacher poses question</td>
<td>Children’s interest in flowers and colors</td>
</tr>
<tr>
<td>Phase 2: color preferences</td>
<td>Active listening by teacher</td>
<td>Children’s uninhibited theories of creating colors</td>
</tr>
<tr>
<td>Phase 3: choices of experiences</td>
<td>Teacher initiates choices of experiences (provocations, drawing, photo taking, etc)</td>
<td>Children accept choices</td>
</tr>
<tr>
<td>Phase 4: choices of words</td>
<td>Teacher poses questions to focus on descriptive words</td>
<td>Creation of new words by the children</td>
</tr>
<tr>
<td>Phase 5: choices of strategies</td>
<td>Teacher makes suggestions</td>
<td>Children develop own strategies</td>
</tr>
<tr>
<td>Phase 6: choices of photos</td>
<td>Teacher shares photos</td>
<td>Children and teacher make choices together</td>
</tr>
</tbody>
</table>

Tier 2 (Negotiation between the children)

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: gardens</td>
<td>Discussing garden ideas (flowers, stones, lion)</td>
<td>Common theme on flowers</td>
</tr>
<tr>
<td>Phase 2: color preferences</td>
<td>Announcing/sharing ideas Questioning theories to create colors</td>
<td>Children offer suggestions</td>
</tr>
<tr>
<td>Phase 3: mural layout</td>
<td>Sharing the space of one large sheet</td>
<td>Sharing space verbally and by action</td>
</tr>
<tr>
<td>Phase 4: verbal expressions</td>
<td>Active listening by the children</td>
<td>Accumulating/abandoning each other’s use of words</td>
</tr>
<tr>
<td>Phase 5: choices of</td>
<td>Sharing ideas by listening</td>
<td>Children develop own</td>
</tr>
<tr>
<td>strategies</td>
<td>and observation</td>
<td>strategies</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Phase 6: viewing the exhibition</td>
<td>Sharing the conceptual and physical space of the exhibition</td>
<td>Natural acceptance of each other’s contributions</td>
</tr>
</tbody>
</table>

**Variable 2: Relationships**

The Color Project finds 4 children and 1 teacher coming together as a learning group, where each child (and adult) is seen as learning in a social medium, learning how to work in a group, relating not only to people but also making newfound relationships with the natural environment around them and relationships with the non-verbal expressions of various symbolic expressions (drawing, painting, photo taking, etc) they encounter. The teacher is keen to help children make sense of all their experiences, not just remember the experience, and therefore respects the children’s need to generate their own questions. The teacher also encourages the children to revisit their choices by the methodology of documentation acting as memory for the children. In such a social constructivist encounter, the variable of relationships in the Color Project is observed on 4 tiers: relationship between the children and teacher; relationship between the children; relationship between the children and the natural environment; and finally, the relationship between the children and symbolic expressions. The first 2 tiers, that of the relationship between the children and teacher and the relationship between the children occurs in all 6 phases. Tier 3 occurs in Phase 2 of the story and Tier 4 occurs in Phase 3 of the story.
### Tier 1 (relationship between the children and teacher)

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: initial meeting as a learning group</td>
<td>Finding common theme</td>
<td>Uncertainty of path of inquiry</td>
</tr>
<tr>
<td>Phase 2: outside of classroom space</td>
<td>Level of engagement</td>
<td>Shared experience as knowledge</td>
</tr>
<tr>
<td>Phase 3: communication through non-verbal expressions</td>
<td>Level of understanding</td>
<td>Shared and interpreted</td>
</tr>
<tr>
<td>Phase 4: communication through verbal expressions</td>
<td>Level of understanding</td>
<td>Shared and enhanced</td>
</tr>
<tr>
<td>Phase 5: strategies for creating colors</td>
<td>Active listening by teacher</td>
<td>Space of uninhibition</td>
</tr>
<tr>
<td>Phase 6: the exhibition</td>
<td>Process of organization, selection, set-up</td>
<td>Space of acceptance</td>
</tr>
</tbody>
</table>

### Tier 2 (relationship between the children)

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: initial meeting as a learning group</td>
<td>Announcing own preferences</td>
<td>Listening to each other’s announcements</td>
</tr>
<tr>
<td>Phase 2: outside of classroom space</td>
<td>Level of engagement</td>
<td>Forging new connections and friendships</td>
</tr>
<tr>
<td>Phase 3: communication through non-verbal expressions</td>
<td>Level of understanding</td>
<td>Shared, adapted, adopted</td>
</tr>
<tr>
<td>Phase 4: communication through verbal expressions</td>
<td>Level of understanding</td>
<td>Shared, adapted, adopted</td>
</tr>
<tr>
<td>Phase 5: strategies for creating colors</td>
<td>Active ‘listening’ through observation</td>
<td>Shared, adapted, adopted</td>
</tr>
<tr>
<td>Phase 6: the exhibition</td>
<td>‘my photos’, ‘my drawings’</td>
<td>‘our exhibition’</td>
</tr>
</tbody>
</table>
Tier 3 (relationship between the children and the natural environment)

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2: visits to Rose Garden, Negishi Park, Sankei-en Gardens</td>
<td>Parks given more identity within the life of the children</td>
<td>Notice to details</td>
</tr>
</tbody>
</table>

Tier 4 (relationship between the children and symbolic expressions)

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 3: symbolic expressions of drawing, painting, photo taking</td>
<td>Free and uninhibited</td>
<td>Further knowledge through experimentation and revisiting experiences</td>
</tr>
</tbody>
</table>

**Variable 3: Non-verbal expressions**

The Reggio Emilia Approach offers a creative perspective to the adopting of ideas, beginning with the belief that the brain is not imprisoned by genes, and that thought can be modified inasmuch as it interacts with the environment (Malaguzzi, 1996). For this reason, the Reggio pedagogue maintains that children are born with all the languages of life, and these languages are interactive by nature. The more languages we are able to recognize in children, the more we can help them act and identify the methodological models for confronting events and experiences to all learning. These languages which coexist in the mind and activity of the children can then possibly become generative forces for other languages for other creative potentialities, and therefore, all of these languages are to be accorded equal value in the guidance of competent adults. It is within this conceptual framework that the non-verbal expressions of communication are embedded in the process of conducting the Color Project.
Non-verbal expressions

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 3: drawing,</td>
<td>Combining the languages</td>
<td>Creative potentialities</td>
</tr>
<tr>
<td>painting, photo taking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Variable 4: Verbal expressions**

It is with intent that I leave this variable last. This is not to say that verbal expressions are least significant, far from so, but rather, I would like to focus on the verbal expressions as a result of the other 3 variables, how the variables of negotiation, relationships and non-verbal expressions are linked and interwoven into the construction of verbal expressions. As written previously, the cultural backgrounds of the children in the Color Project are all different, with only 1 native speaker of English in the group. Enhancing verbal expressions is naturally embodied in the culture of our early learning center but also throughout the entire school to high school, with the understanding that all teachers are in effect ESL/EFL (English as a second/foreign language) teachers. In this data analysis of verbal expressions, I would like to focus on the particular use of the verbal language in a group, and how this particular usage of words may affect the enhancement of verbal expressions.

**Verbal expressions**

<table>
<thead>
<tr>
<th>Context</th>
<th>Interaction</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 4: meeting sessions</td>
<td>Expressing one’s point of view: “Look!...” or “I want…” Projecting possibilities: “maybe you should…”</td>
<td>Building a repertoire of words</td>
</tr>
</tbody>
</table>
Asking for opinions: “I wonder what…”
Asking for approval: “do you like it?”
Giving approval: “me, too!”
Asking for help: “how do you make…”

The Variables in relation to Methodology

As the teacher passes in and between the phases in the story of the Color Project with the children, the diagram below is utilized to guide the teacher with the process of taking the necessary steps in the methodology of action research, with a focus on the weaving between documentation and scaffolding, as this area is identified in the pilot study needing close attention in relation to the meaning of assessment, that is assessment as a process to scaffold the children’s learning.
diagram 1(repeated)

It is within the weaving between the documentation (data) and scaffolds (designing experiences) where the variables have been identified (diagram 2); and it is the weaving between the scaffolds and provocations (diagram 3, p. 139) and the weaving between provocations and documentation (diagram 3, p. 139) where the action steps are taken within the methodology of action research.
scaffolds \[\rightarrow\] documentation \[\leftarrow\] weaving  
\(\text{moving in different kinds and levels of knowledge}\)  
negotiation relationship Non-verbal language Verbal language

\textit{diagram 2}

\text{Cycle: identifying idea/reconnaissance/general idea/reconnaissance/amended plan/implementation of next action steps}

\text{provocation}

\text{Cycle: identifying idea/reconnaissance/general idea/reconnaissance/amended plan/implementation of next action steps}

\text{diagram 3}
The Findings

Framing narrative

In trying to present and explain the findings of what I conclude as a result of gathering data and analyzing the data set, I like to view Kaplan’s (1964) explanation of analysis that it is “concentrated description…putting one fact or law into relation with others”. Kaplan is illuminating as he says: “explanations are always open; they depend on certain conditions and are partial, approximate, indeterminate in application to specific cases, inconclusive, uncertain, and typically limited to specific contexts” (pp.351-355). Therefore, by taking a humble stance that explanations are not necessarily wholly determinate and precise, I feel I am then able to place the explanations in a historical perspective which tries, first of all, to make sense of a series of events, and then secondly, to take into account of both personal meanings and public actions. Conclusions often look toward the integration and linkage of variables found, but I have come to realize that in order to see the variables as related, there is also a need to differentiate the variables and “unbundle” them first in order to make the linkage more powerful.

“Unbundling” the Variables:

Negotiation

The data set reveal that negotiations can first of all be explicit or implicit; secondly, negotiations occur between people; and thirdly, negotiations may also occur within a person (Fig. 1)
Every teacher, I believe, finds him/herself needing to make decisions on the spur of the moment when interacting with students, negotiating ideas and options with others and within him/herself. In this study, one realizes that children face the same experiences as the adult, and that children are also competent negotiators. In fact, unlike adults, children appear not as possessive of their ideas, but have a desire to participate by accepting other choices of ideas and experiences available. For negotiations to occur, one realizes the need to be able to offer the choices by creating a climate or space which prohibits intimidation or inhibition. In order to create such a climate or space where both children and adults may generate questions, the variable of relationships becomes a necessary element of consideration.

**Relationships**

In the Color project, the network of relationships is complex and appears on several layers. As presented in the data set, the relationships have been “unbundled” broadly into the 4
categories (Fig. 2):

![Diagram]

Fig 2

If we are able to view the development of each of the relationships in a range from the beginning of the project to the end of the project during the course of one school year, the intimacy and depth of each of the relationships are affected with the element of time as a factor for familiarity; however, the findings also conclude that the awareness of the children as a group to the development of shared understanding with a shared purpose deepens each of the relationships with meaning. In other words, the greater the awareness of the shared understanding, the shorter the distance between each of the relationships (Fig. 3, p. 142), where eventually the shared understanding encompasses each of the relationships as one whole (Fig. 4).

![Diagram]

Fig. 3

142
The metaphor of the “hundred languages” which embodies the entire process of the Color Project is designed by the teacher to seek the relationship between the non-verbal expressions and verbal expressions.

**Non-verbal expressions**

The non-verbal expressions recognized in the Color project are represented below (Fig 5):
As the child(ren) encounters each of the non-verbal expressions, a relationship between each of the non-verbal expressions begin to develop through and with the child(ren) (Fig. 6):

![Diagram of Non-verbal Expressions](image)

### Verbal Expressions

The children initially begin with the 3 primary color words and 3 secondary color words:

<table>
<thead>
<tr>
<th>Red</th>
<th>Blue</th>
<th>Yellow</th>
<th>Green</th>
<th>Orange</th>
<th>Purple</th>
</tr>
</thead>
</table>

The children begin to use expressive and descriptive words:

- darkish; lighter; darker; little bit light; little bit same; little bit dark; little bit purple

As the children move in and between the languages, the children participate in the ways the teacher sensitizes the children to build and make connections with the languages as experience. The months of working with the children in this way can seemingly provide anxiety within the teacher, not anxiety in the relationship between the teacher and the children but anxiety within the teacher with a sense of uncertainty where the path is leading to. At the moment when the children make a transformation, that is, transforming all of their experiences into another form, in the case of the Color Project, transforming the abstract concept of colors into concrete concepts of color words, the children’s thinking is limitless.

The findings show the creation of the following words by the children (grouped broadly into
shades/hues of color):

<table>
<thead>
<tr>
<th>Shades</th>
<th>Brownies</th>
<th>Jungle</th>
<th>Kimono</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Meatballs</td>
<td>Grass</td>
<td>Wine</td>
</tr>
<tr>
<td>Grey</td>
<td>Chocolate</td>
<td>Green</td>
<td>Lollipop</td>
</tr>
<tr>
<td>Silver</td>
<td>Coffee</td>
<td>Turtle</td>
<td>Purple</td>
</tr>
<tr>
<td>Shiny</td>
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**Conclusion**

This chapter devoted to the presentation of data, data analysis and findings views pedagogy as practice based on an interdisciplinary approach and takes into account the encounter between different fields of knowledge, that especially of the expressive languages. I believe the educational background we have as educators, which includes after our university studies, often does not involve being open to other fields of knowledge. I think we are forgetful that expressive languages are really an everyday thing and that they are very much part of the human heritage and an anthropological approach to knowledge. The data reveals the importance to an awareness of the presence and encounters of other languages; and also to
the awareness that children possess other languages with respect to the ones traditionally dealt with by pedagogy. This awareness offers a way to assess the process of the children’s thinking and learning and to scaffold this learning.

The data brings forth the encounter between two powerful languages – that of word and the visual language, where the visual language is not relegated to one place within the school in the form of an ‘art room’, but was constructed and related within the whole school, and also outside of school. I believe through the data we are able to see clearly the intelligence and sensitivity of young children in their relationship with visual languages to deepen their relation to the concept of color, as can be observed with the naming of the colors.

This research enquiry in search for the meaning of assessment, by providing space to the expressive languages, aims to give visibility to the didactics, to the learning processes of children and teachers through documentation enacted through the methodology of action research. This methodology in the context of this research enquiry deepens our practice when working with the children everyday by reminding us how ill-equipped we are to recognize what is taking place, to ‘read’ what is happening before our eyes, in communicating it through documentation. Through the process of action research, the teacher constantly asked questions of herself: Why does the group show a natural preference to earthy shades and darker hues? What makes a particular color unique to them? How do they see color in relation to their own world? What instruments, equipment, do we have to put in our ‘backpacks’? What do we choose to put inside them so that listening is an occasion of growth for both the adult and the children so that the children build an awareness of learning and knowing?
I believe these questions can help quantify meanings and reflections on the issue of professional education and development, which in turn relates to the issue of the rights, responsibilities and power of the teacher of which Drummond (2003) writes in relation to the learning of children and the meaning we assign to assessment.
Chapter 6

Conclusion

A Framing Narrative

In this research enquiry, I have approached the concept of assessment taking a socio-cultural perspective and its implications for assessment practice. Invariably, assessment is linked to learning, where learning, from a socio-cultural viewpoint is conceived as a social process in which the children’s minds develop as a result of constant interaction with the social world, the world of people who do things with and for each other. Thus, I believe, there is a necessity to view the method of assessing as catching something of the learner in action with others, rather than trying to measure how much a body of knowledge has been transmitted.

The seminal works of Lev Vygotsky on his theory of social constructivism has provided the theoretical framework of this study which offers the understanding of human cognition and learning as social and cultural rather than individual phenomena, claiming how people learn from each other and use the experiences of previous generations to successfully meet the present demands of life where ‘cultural tools’, such as language, are mastered by children to become members of the human community and enable young learners to more elaborated forms of mental functioning. Vygotsky’s writings have informed my beliefs to view learning as a relational space, rather than to view learning as isolated spaces of actions performed by individuals.

The method of action research has provided the methodological framework of this study to inquire into the meaning, place and practice of assessment and its relation to documentation
from a socio-cultural perspective within the context of the early learning center. Action research has enabled the participants from the early learning center to conceptualize the relationship between documentation and assessment in terms of the teachers’ knowledge and practice, to see beyond the technical constraints of documentation by identifying and disclosing those very constraints in order to explore the relationship between documentation and assessment. This identification of the struggle towards understanding the method of documentation by the participants in the pilot study acted as a catalyst in enabling the participants to realize and adopt changes in practice through the co-construction of a definition of a portfolio, looking towards assessment practices, not as focused on individual performances and achievements alone, but in relation to others with a focus on documenting project work, providing context for the case study. The case study encompassed project work, titled The Color Project, carried out by four children and a teacher, and investigated into the relationship between documentation and assessment by looking at what happens at the intersection of the learning group in the Color Project and documentation forging the relationship between the two by way of the teacher’s knowledge and actions.

This concluding chapter will offer to make clear the concept of relationship as significant to make the link between the theoretical and methodological framing of the study, the data analysis and the findings. The chapter will also include a reflection on the research processes. Finally, the chapter will close with implications of developing socio-cultural approaches to assessment practices as a contribution to knowledge in the field of education for extending further dialogue.
The Concept of Relationship

The relationship between the child and adult:

From the perspective of an early childhood practitioner who is in daily contact with the children, a close bond is established between the teacher and students, such that the many and varied daily experiences construct a biographical learning itinerary which is both charming and challenging at the same time. From my daily experiences at the early learning center, I am able to witness children who constantly do and say amazing, beautiful, and important things which attract and catch the attention of the teacher. From my observations and as evidenced in the weekly meetings, this poses struggles for decisions within the teacher to be selective as to what proposals and experiences to extend which may promote further interest for learning. I believe there is a richness in everyday life with the children such as the greetings in the morning, meal times, activities, etc., however, with a risk for the adult to become inattentive and unreflective to the cadence and rhythms of routine, sometimes falling into mechanical repetition of actions, rather than exploring and making productive new connections. If the teacher, then, is equipped with the planning tools of observation and documentation, the teacher has the possibility to get to know the children and their interests and establish a deeper relationship to propose and design learning contexts to make new connections. Establishing relationships involves the child and the teacher being in partnership together on this path of learning. The data from the color project verifies this statement in the children’s and teacher’s process of constructing color names and of constructing the collaborative mural painting to which the children named “The Flower Party” because the flowers are all friends.
Through this partnership view, the relationship between the children and teacher is constructed in direct relationship to the ways in which the teacher gives value to the actions shared in their experiences together. As the teacher gives identity to each child through close observation and listening, so too, the identity of the teacher is formed with and through the children as a result of this reciprocal relationship.

Vea Vecchi (2002) writes how Gregory Bateson examined very closely the complexity of relationships between things that surround us. According to Vecchi, Bateson reflects on the importance of the aesthetic approach as a major and significant connector of elements of reality and provides a definition of aesthetics to mean being responsive to the pattern which connects (Bateson, 1979). This definition has helped Reggio educators to view the relationship between symbolic expressive languages to the educational processes of development and knowledge-building as important and necessary in highlighting hidden patterns of reality to create new insights.

Through the medium of paint, I have observed how children sustain their interest in creating, whether it be colors or the painting itself, not limiting the experience to that moment in time, but extending it throughout the day, to weeks, to months, involving the planning of the composition, experimenting the mixing of colors, making choices, projecting the time frame of completing the composition, and discovering the insight into the joy of creating with others. In such cases, I am reminded that imagination becomes the unifying element of activities and makes us conscious of the value of the processes that the visual language can sustain, as well as the contribution it can make to other ‘languages’ or disciplines.
The definition also helps me to view the relation between the children, and the relation between the children and the teacher as needing to be aesthetically pleasing, aesthetic here to also mean the pleasure and pleasantness of working together collaboratively. The pleasure of working together requires each to be responsive, where one must establish an intense and empathetic relation with each other and the things of each other, (how a child may spontaneously exclaim: that’s pretty! to another child’s painting) with also imagination as the unifying element to connect between patterns of behavior and thinking and also between the visual expressions of the children.

**Relationship between documentation and assessment:**

Within the theoretical framework of Vygotsky’s socio-cultural theory, this research enquiry has given evidence to the method of documentation as helping the teacher to visually record, recall , and assess what the child knows and what is almost ready to be known as a result of being with others, herein where lies the relation between documentation and assessment. The relation between documentation and assessment lies in the perception of the teacher to understand and acknowledge the balance between what is known and what is almost ready to be known as a result of the child’s interaction and relation with others (which may also include the adult) and with artefacts, such as the materials (clay, paint, etc) on offer. By identifying this relation between documentation and assessment, assessment practices then from a socio-cultural perspective assesses and takes into account the child’s maturation process already completed, and also takes into account the processes that are currently in the state of formation. This is observed in the data when the children understand the concept of combining colors to make ‘new’ colors, but not quite certain beyond their identification of
primary and secondary colors. Referring to Vygotsky (1978) the essential feature of learning is that it creates the Zone of Proximal Development (ZPD); learning awakens a variety of internal developmental processes within the child that are able to operate only when the child is interacting with people in his/her environment and in cooperation with peers, such as only being able to imitate that which is within the child’s developmental level. Vygotsky reifies that when and once these processes are internalized by the child, they become part of the child’s independent developmental achievement. Thus the meaning, place and practice of assessment from a socio-cultural perspective takes into account the state of the child’s maturing mental development, as Vygotsky (1978) writes of the ZPD as defining the mental function that ‘will mature tomorrow (buds or flower of development) rather than fruits of development’ (p. 86).

In this way, the ZPD characterizes mental development prospectively, looking at the potentials of children and the teachers’ conception of scaffold to mean projecting for possibilities. If one is provided with the opportunity to design a learning context, based on daily observation by the teachers such as the children’s fascination with colors, the documentation produced with intention along the way has the possibility to be a tool for evaluation and self-evaluation of pedagogical documentation, assessing the children in their zones of proximal development. Furthermore, the daily observations are, of course, valuable documentation in its raw and rough stages, to provide context for further pedagogical documentation in consultation with colleagues and provide particularities of children which may be missed in summative forms of assessment.

The meaning, place and practice of assessment from a socio-cultural perspective then looks at
the concept of imitation as focal where the child can only imitate that which is within the child’s developmental level, which also gives verification that children are able to do much more in a group or collective activity because the situation offers more experiences for the child to imitate. This is evidenced in the data in the speech patterns of the children, where children ‘imitate’ the phrases of their peers, adding the newfound phrases into their repertoire of speech and patterns of speech. This is also evidenced in the concoction of colors, how the children observed the strategies of other children creating colors, to interpret this procedure in order to create their own colors. The interpretative act and translating this act observes and assesses the child’s maturing mental functioning and development.

From the analysis of the data the method of documentation shows not only to the teacher, but to the children, colleagues and parents, the process of knowledge construction; the documentation allows the adult to reflect and be attentive to the abilities and particularities in children in order to assess when new knowledge becomes internalized. This is evidenced in the data when the children internalized the understanding of the formation of color words based on their cultural and social experiences, giving the words new meaning and identity.

**Relationship between documentation and assessment conceptualized in terms of teachers’ knowledge and practice:**

In order to mediate the relationship between documentation and assessment, the data analysis show the need for the teacher to possess an understanding of both theory and practice of teaching practices based on socio-cultural perspectives. Without possessing the understanding of socio-cultural perspectives, the concept of looking at groups as a context for
learning does not occur. The action of the teacher to mediate the relationship between documentation and assessment rests in the capacity to read the conversational cues, to acquire a sense of the children’s rhythm, and to see what is yet to occur by being reflective, reflexive, attentive, and sensitive to the active and passive actions and interactions of the children, entering into a genuine closeness or an attitude of complicity constructed over time. What happens during the processes of documentation and assessment in order to forge this relationship is that the teacher begins to ask questions, not only to the children, but to herself. The teacher who designed and conducted the Color Project constantly asked questions through the process of the project. The questions did not aim for determinate answers but were investigative questions to herself to guide and assess herself and the children through the process of the project. This attitude of not knowing, of accepting the presence of confusion and attempting to look into that confusion is what I believe to be the value of the insight gained from this study which may be generalized. To share this attitude of not knowing with colleagues is also another added factor into understanding the relationship between documentation and assessment as conceptualized in terms of the teachers’ knowledge and practice.

The teacher was encouraged by the participants of the research enquiry to write an article for an early childhood magazine based in Australia. The process of writing the article which took place during the school year 2007-8, resulted in a reflective discussion between the researcher and the teacher in lieu of a single interview.

One of the key elements resulting from the teacher’s reflection was the concept of the significance of developing a deep relationship between the teacher and four children. The
teacher reflects that it was through developing this relationship with the children and also between the children which resulted in the depth and richness of the project. The richness of the project specifically entails how the teacher was able to pitch the learning of the children to a higher level, assessing what learning was taking place to scaffold this learning through taking steps and actions by being reflective in an unhurried manner. The teacher recognizes that in her previous practice, she would not have given and devoted the time to the children and herself the exploration of paths which in her mind may not be directly linked to the project or the learning she had in mind. In her words, she would have ‘short circuited’ the project to reach the end of it. ‘I felt that allowing time to pause, think and gain awareness was necessary in making the process clear and purposeful, and sometimes that meant redefining the starting point or changing the direction of the initial process. More importantly, using the staff as a springboard for guidance, ideas and feedback help build the learning and gain different perspectives.’ Being reflective in an unhurried time meant for the teacher to ask questions of herself, rather than thinking of activities to provide for the children.

**Reflection on the research processes in relation to the process of action research:**

In reflection on the research process in relation to the process of action research, this research enquiry through the story of the Color Project has profound meaning for myself not only as the active participant researcher, but also as person. First, the research process reveals the temporal dimension or “the time of relationship” (Edwards, 2002) which is embedded in the history of the Color Project building mutual trust and complex relationships. The Color Project is the result of a cumulative and on-going process of establishing a community of learners which include not only the four children and a teacher, but also the parents, the ELC
staff and the wider community at large. Second, as the teacher has signified, the research process makes visible the breadth of the relationship between the four children themselves and the teacher, extending this network of relationships to include the ELC staff in the process of action research. The research process helps us realize that learning and development happen in the context and history of long and well-established relationships.

The research process in relation to the process of action research has shown that assessment practices do not involve one party influencing the other, but shows the children and teacher, and teachers with teachers, working together to create experiences in a very interdependent way. This can be observed in the negotiation taking place between the children and teacher from the onset of the Color Project and also in the discussions amongst the teachers in the pilot study on the topic of documentation. Oh (2009) notes that this partnership view of the teacher-child interaction, child-child interaction and teacher-teacher interaction offers a way to address concerns such as when to intervene and when not to, which reflects a more traditional one-party direction of influence thinking because it derives from an assumption of some sort of boundary between the child’s view and the teachers’ view, or the boundary held between teachers’ views. Oh (2009) writes:

‘The partnership view assumes that the teacher and child, and the teachers themselves are already participating in the experience together, as socio-cultural developmental psychologist Barbara Rogoff (2003) argues, leaving no boundaries to cross.’ (p.102)

Thus, this research enquiry identifies participation, as in partnership, as a value, participation as a feeling, a sense of belonging, providing spaces, ‘languages’ and strategies to make this kind of participation possible. This sense of belonging has a connotation of togetherness for
affiliation, but also as a phenomenon related to activity, to belong together by doing, thinking and expressing something together. According to Wells (1999), knowing can thus be most adequately understood as the ‘intentional activity of individuals who, as members of a community, make use of and produce representations in the collaborative attempt to better understand and transform their shared world’ (p.76). Such a conception of knowing and learning reflects knowledge as action, participation, and transformation of individuals within specific social and cultural contexts. When we participate in an educational process, we bring the whole of ourselves, our own growth and development into play where there is a constant relational reciprocity.

The process of action research has also identified the value of subjectivity of both the adult and the child, highlighting the correlational and reflexive aspects involved in the construction of the identity of the participants. By giving subjectivity value, freedom is offered to the teacher and the children to express what they think and feel, and provides a perspective to view not only what I wish or hope to see, but to see what I was not able to see before. To underscore the value of subjectivity, the process of action research views the relationship between subjectivity and intersubjectivity, that is, the relationship between the individual and others and not that of being subjective or objective, where I have come to understand more clearly that our individual construction exists with others and through others. The interconnectedness between the values of subjectivity and intersubjectivity necessitates in listening to the differences within each individual, and more importantly, accepting the changes that take place within us which are generated by our relationships and our interactions with others. As Vea Vecchi (2002), former atelierista in the Diana School, Reggio Emilia, writes, ‘without listening, without being responsive to the ideas of others, there can
be neither learning or teaching.’ (p.141). The research process in relation to the process of action research observes the pedagogy of listening in relation to dialogue, dialogue as a flow of meaning through words, not necessarily to change the ideas of others, but rather to put one’s ideas on hold and review meanings whereby dialogue facilitates the process to create new perspectives by responding to them.

**Implications for developing assessment practices from a socio-cultural perspective:**

The assessment which I write of, as identified through this research enquiry, is labor and time intensive. However, I believe the job of teachers is to learn and to understand, involving the assumption of responsibility as a moral act, which requires keeping a distance from preconstituted ideas, but rather, staying close to the children to the act of doing and reflecting and seeking constantly the balance between restrictions and the real passion of learning. As Wells (1999) states:

“teaching, like learning, is an ongoing process of inquiry, in which the knowledge constructed about learners and learning, as these are encountered in particular situations, continuously transforms the teacher’s way of understanding and acting in the classroom” (p. 164).

By documenting the process of knowledge construction about learners and learning, teachers are in constant conversation with the concept of questioning or inquiry, that is, as Alford (1998) defines the craft of inquiry as one that “teaches you how to connect theory to evidence in order to construct valid explanations of the workings of society” (p. 18). Alford sees the concept of inquiry as an emotional level of commitment to the task as well as a cognitive process which includes support from and the participation of colleagues as well as inspiration from books and from one’s imagination.
The implications of developing assessment practices from a socio-cultural perspective requires that the starting point for all these undertakings will always be the child and the group of children, through what they say (or do not say) and their mental images and exploratory strategies. I am well aware of the ambition inherent in the desire to understand more about the children. Although the documentation may only be able to capture fragments of the children’s thoughts and actions, the implications of developing socio-cultural assessment practices through the processes of documenting makes us more aware of the unique qualities of individuals and groups, and this can help us make our proposals more well thought-out, discussed, and perhaps less certain, but hope that this process will be less liable to betray the children.

A socio-cultural perspective moves away from viewing the child just as recipients of education, but includes and acknowledges the child as a full member of the educational project and educational triad, that is, the children, the parents and the teachers. Implications of developing assessment practices from a socio-cultural perspectives then necessitates the effort of the adult to try to understand how children co-construct knowledge by listening to them and supporting the children to find meanings of this knowledge construction because of the realization that children are rightful members of the educational project.

Perhaps I am envisioning or imagining a transformation of the teaching profession for I believe it is easier to organize drill and practice in decontextualized skills to mastery and assess such a skill as opposed to creating and sustaining environments that foster thought and human dispositions needed by young people in the future. Kress (1997) in search of human dispositions needed by young people in the twenty first century, begins by looking at the
strategies and works of young children in their meaning-making practices as a very good starting point for rethinking about the future of children to lead productive lives in a society which is positively engaged with the challenges of its times.

The key word, I have come to believe through this research study as implications of developing assessment practices from a socio-cultural perspective, is relation. It is realizing the relation between the children as well as the relation between the child and teacher, and the relation between teachers, as fundamental to learning in order to build a relationship between conceptual aspects, images and words. This realization also takes into account the relationship between the forms and contents of the various disciplinary areas so that they will fuse into a ‘hundred languages’. It is realizing that the relation between the child and teacher is built and given stability by the value to which the teacher places as valuable, as constituting learning, giving space for that learning to occur, the relation between teacher and value. And the relation between teacher and value is realized by giving visibility to the space of learning by documenting the process of learning and the actions taken for the learning; and hence we see the relation between visibility (as communication through documentation) and learning. Each significant relationship produces changes in the learning of children and adults alike.

Vygotsky (1978) identified that learning is not development; learning is a necessary and universal aspect of the processes of development which is culturally organized, and developmental processes do not coincide with learning processes. Then the implications for developing socio-cultural assessment approaches is to assess the process of development, such as in situations where the children are engaged in collective activity or project,
observing how the relations and interactions with and through the children promote and extend the developing mental functions of voluntary memory, speech, perception and thinking, acknowledging children by listening to them as rightful members of the educational process.

The meaning of assessment, and its relationship to documentation has been pursued by listening to a group of children in their inquiry on the concept of color. Assessment, as enacted in this research enquiry is viewed as a process to understand children’s learning within a group and how children learn, acquired through observation and reflection, to give visibility to the potentials of young children. Assessment practices from a socio-cultural perspective is viewed as a process to scaffold the learning of the children by crossing over and intermingling a range of disciplines from linguistic to non-linguistic, with a hope to instill in the children the realization that people, both adults and peers as much as materials, offer valuable resources for gaining knowledge. This takes into account the encounter between different fields of knowledge, basing an interdisciplinary approach as pedagogical practice for each discipline interrelates and influences the other.

At the same time, the process of working with the children in this way, framed within the methodology of action research, seems to have brought to the task through this research enquiry, more than professional training or an understanding of some aspect of learning, but rather, has brought the whole of ourselves, underlying the very act of seeing for each of us is a whole set of beliefs and values which are often not explicit.

In an early childhood setting, our encounters with the children are varied and many, and what
is more, they occur constantly and often simultaneously throughout the day that sometimes we wish we could say “stop” so that we may catch a breath from all the learning that is going on. It is true to say, (and I am certain that anyone who has had the fortune to work with young children would agree) there is never a dull moment when we are in the presence and the company of children. I could perhaps extend on the concept of encounter from between people to include the environment as an element of encounter for and between the children and adults, such as a sunny day, a tree to climb, a light table in the classroom, or a more intangible element such as the quietness and softness of a room. Encounters occur constantly every single moment of the day, and I consider each and every encounter as valuable and significant, whether they may occur incidentally or with intention.

Implications for assessment practices from a socio-cultural perspective needs to see the encounters with children as teachers working with the children in a series of evolving, intersubjective spaces during the school day. The meaning, place and practice of assessment involves asking the question how to engage or how to co-construct with the children within those encounters, and not the question of whether to intervene or not. Assessment practices from a socio-cultural perspective, I believe, requires the sensitivity of the teacher to those encounters with the children, not as showing sensitivity to finding the right moment to imbue a body of knowledge to the children, but rather to mean for the teacher to be willing to adjust his or her own expectations and goals in response to the child’s intentions and feelings.

Lella Gandini has reiterated what Loris Malaguzzi says about children that “things about children and for children are only learned from children” (KAREA Conference, 2008). I know from my everyday experiences being with young children that I do not know enough
about how children learn. I still know too little about how a child learns, how knowledge and opinions are formed. It behoves me to think that Reggio educators, who have built their educational project for over 40 years grounded in their methodology of documentation, have the humility to say (in Crossing Boundaries, International Conference, Reggio Emilia, 2006) that they are still too ignorant to be able to afford the luxury of not documenting and thus not doing research. And so, too, I am learning that by listening to the children, by observing the children and documenting, I feel I am at least able to come half way to meet the children who run towards us, and become closer to the children and their way of seeing and understanding. This research enquiry has pursued the meeting point between the child and adult which offers much enchantment for learning for both the child and the adult. Assessment practices from a socio-cultural perspective require the adult to find the maximum participation in the encounters with the children, often a space of uncertainty, in order to create meaning together.

**Extending further dialogue:**

I take a stance in believing the child’s intelligence, that the child is bearer and constructor of his/her own intelligence in the presence of others and in relation to others. In my daily experiences with the children, I believe the child is a born researcher; how often do I see the pensive look on a child as he/she discovers, observes, then follows the path of an ant, or the many different strategies and attempts the child makes to fold a piece of paper to make it fly like an airplane higher and faster? How often do I see the child thinking of ways to build a structure that is ‘bigger and bigger, like daddy’? How often do I see how a child experiments entering into play, or chooses not to enter, especially when there are already two children actively engaged? I believe it is only when the child’s and our searching comes together for
things that we do not quite know that we can improve our relations, our encounters, to produce a marvelous understanding between the adult and the child. I believe it is by holding this image of the child and understanding the task of the educator is to listen, to observe and to document, that I am able to look closely at the children and begin to understand how best to look closely at children’s learning, which is as much our learning.

When we look at children and try to understand their learning, the relation between children and learning, Drummond (2003) writes: “What we see is deeply affected by what we bring to the act of seeing” (p. 92). This research enquiry brings forth a perspective that assessment requires understanding children through active listening in order to enrich our encounters with the children, which in turn implies understanding ourselves, understanding the inevitable relation of what I see and how I see. Ironically, by giving visibility to the children and their voices, the teacher is given identity by listening to the voices of the children. I have listened to the meanings that children bring with them and shared those meanings with other children, parents, teachers, the wider community at large, and in this research through the ways of documentation giving visibility to the identity of children as resourceful, social citizens. Evidence of this is given by the myriad of color names the children created together, where the children, as can be recalled, initially started off with the names of primary and secondary colors.

Through this research enquiry, I have come to realize that children’s words and expressions provide many opportunities to question the meaning of what the teacher should be or what the teacher wishes to be as a result of listening to them and responding to their ideas of who the teacher is in the work with the children. The children’s voices are incredibly inspiring,
beautifully ironical with or without intention and willful interests and always moving my logic of learning and teaching anew. I believe there are many professional instruments to help us gauge the weight and the value of our professional identity and work. These are very important structures the profession necessitates, but through this research enquiry, I believe that children’s voices are as important or perhaps, the most crucial tools to see where we are as educators in direct relationship to them through our modes of teaching and learning.

This research enquiry comes to full circle where I began the enquiry with the need to incorporate the aspect of emotion when thinking about assessment. The implications of assessment practices from a socio cultural approach through this research enquiry ensures the value of play and fun and of emotions and feelings have been given visibility and therefore viewable, to be seen as essential elements of the educational process, whereby learning itself becomes a value by its power to bring individuals together in a warm and enchanting relationship between those who learn and that which is being learned, whether adult or child.

As truly a novice to research, I consider this research enquiry as my apprentice piece, with an understanding that there are deeper, broader and wider perspectives unimaginable to be considered on the aspect of assessment in different learning contexts. Throughout this research study, I have attempted to develop a reflective awareness of my work as a researcher to connect meanings, understanding, experiences, with a hope to enhance the quality of my interpretive acts.

I have made a case for listening, observation, participation and documentation that is non-judgmental and non-evaluative as the appropriate methodology for the study of human
phenomena. I can say that I made a choice and set a value priority. The more I am in close company of children, the more I am able to observe and listen, and I am impressed that what is educationally consequential is how each child engages the world and the complexity and variety of that engagement. I feel discomfort that children may be explainable by reference to external constructs and categories, because I am of the opinion that classification, generalization and statistical methodology cannot accommodate or illuminate individualness and particularity, where individuality and concrete particular are dominant and important features for anything human. The implications of assessment practices from a socio-cultural perspective needs to ensure that individualness and particularity are highlighted and understanding multiplied when we have the opportunity to participate in a group, or in a community of learners.

I attempt to look at the boundary of assessment, therefore, not as measure, but perhaps as the right of the children to schools where assessment has the possibility to be viewed as requiring psychological capital, social capital, human capital, and cultural capital (Bourdieu, 1986), where teachers may ask questions of themselves on how we may lend our experiences to the particular and individual messages and meanings embodied in the linguistic and non-linguistic ways of expressions and communication of the children.

Coming from a view that school is a human community possessing the potential for remarkable achievements in both individuals’ learning and the contributions of a group to the learning of others, I know that I am asking a great deal from everyone in the learning community and I realize that the potential is profoundly difficult to realize. However, teachers as practitioners are the people who work most closely with the children on a daily
basis. Because the process of learning and teaching are entwined in intimate and subtle ways, a teacher’s view through documentation is needed to capture the minute details that are essential data for investigation. And therefore, I believe the teacher’s documentation, understood as both assessment and research methodology, provides data to pedagogical research that is very much intimately tuned to the rhythms of life and learning in classrooms. Assessment practices from a socio-cultural perspective reconceptualizes the profession of the classroom teacher to embrace teaching as an act of research, investigation and learning.

The very concept of assessment, as we mostly understand it today, exists in the conceptions of knowledge as a product of learning, as evident in the language of educational assessment such as outcome-based, performance-based, or standards-based assessment. Such discourse implies deterministic ways and places the concept of assessment on epistemological ground that is incompatible with the theoretical positions of social constructivism on which this research is based. The implications of assessment practices from a socio-cultural perspective incorporates the concept that what we know or understand is inseparable from how we know and understand, and questions the justification of deterministic ways of assessment practices. When knowledge is conceived as developing among individuals collectively participating in an activity, the concept of assessment needs to consider the students’ educational experiences and activities in which they engage.

I, therefore, view learning as dialogic and that it results from the interactions among participants in the activity of learning. True dialogue lends itself to revelation of identity, as observed through the Color Project, as it challenges ideas such as the meaning of assessment. Here I view dialogue, not as a teaching technique, but as a principle. This research enquiry
attempts to uncover theories and assumptions as a way to better understand our practices in relation to assessment and reformulate the questions and perspectives from which we work by attempting to make connections between theoretical formulations with practice. Theories and assumptions remain invisible unless rationales and evidence are provided for claims we make and the actions we take.

This research enquiry offers the methodology of observation and documentation as indispensable work strategies for sustaining the dialogue between educational action and the learning processes of children and adults. According to Lacono (1987) making visible is the art of knowing, but I have learned from this research enquiry how difficult it is to see the processes and to make them visible and communicable. Even when I have been fortunate enough to get close to visibility, I must always keep in mind that what I am looking at is an interpretive narration that needs to be shared and reinterpreted in contexts of exchange between divergent ways of thinking. It is my hope that this research enquiry has offered an insightful and signifying space to view the place and meaning of assessment by placing emphasis on a multiplicity of perspectives which enacts commitment to deal with complexities on the meaning of assessment, to resist as much as possible, the easier path to solutions of measurable size. Perhaps then we as educators of young children may think about our own learning pathways around assessment, to set up dialogue opportunities within our own settings, valuing critical questions over correct solutions, as we respond by taking action and try out new ideas to develop assessment that affords continuity as a reflexive practice.
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Appendix 1

The aims of the Foundation Stage (published by DfEE and QCA in 2000)

All those working with children during the Foundation Stage are expected to plan activities and experiences for them to help them develop and learn. The progress of each child should be monitored to ensure that it is satisfactory and there is a focus on the early identification of children who may have special needs that may require specific provision, such as specialist teaching, support within the setting or adapted equipment. Early identification of special needs is expected to avoid children experiencing failure in formal schooling. A broad curriculum is proposed, not arranged in traditional subjects, but in learning areas, very similar to those identified in the ‘Desireable Outcomes’. Throughout the curriculum there is emphasis on developing, fostering and supporting children’s

- Personal, social and emotional well-being by ensuring that there are thought-out procedures for settling new children in and creating an ethos that fosters self-esteem and a positive self-image in all children;
- Positive dispositions and attitudes to their learning;
- Social skills, helping children to learn to cooperate and work harmoniously alongside and with one another;
- Persistence and attention skills, particularly the ability to get deeply involved in and concentrate on self-chosen individual tasks or in group play;
- Language and communication, with an emphasis on children talking and communicating to one another and to adults, refining their language skills in an ever-widening range of situations;
- Reading and writing, with an emphasis on helping children explore the world of stories and print by providing books to explore and situations to use words and text in increasingly controlled ways;
- Mathematics, with opportunities to develop an understanding of number and measurement, shape and space and pattern and to use the language of mathematics with increasing fluency and accuracy;
• Knowledge and understanding of the world so that children can pose questions and solve problems, experiment, hypothesise, express their ideas and find out about places and people significant to them;
• Physical development which offers opportunities for children to develop fine and gross motor control and to understand something about how their bodies work and what they can do to be safe and healthy;
• Creative development where children can express their feelings and thoughts and ideas through art and music, movement and dance, imaginative and role play, design and technology.

The principles underpinning the Foundation Stage:
Effective Education requires both a relevant curriculum and practitioners who understand and are able to implement the curriculum requirements.

Effective Education requires practitioners who understand that children develop rapidly during the early years – physically, intellectually, emotionally and socially.

Practitioners must ensure that all children feel included, secure and valued.

Parents and practitioners should work together in an atmosphere of mutual respect within which children can have security and confidence.

No child should be excluded or disadvantaged because of ethnicity, culture or religion, home language, family background, special educational needs, disability, gender or ability.

For children to have rich and stimulating experiences, the learning environment should be well planned and well organized.

To be effective an early years curriculum should be carefully structured.

There should be opportunities for children to engage in activities planned by adults and also
those that they plan or initiate themselves.

Well-planned, purposeful activity and appropriate intervention by practitioners will engage children in the learning process.

Practitioners must be able to observe and respond appropriately to children.
Appendix 2

“The Hundred Languages of Children”
No way. The hundred is there*

The child
is made of one hundred.
The child has
a hundred languages
a hundred hands
a hundred thoughts
a hundred ways of thinking
of playing, of speaking
A hundred always a hundred
ways of listening
of marveling of loving
a hundred joys
for singing and understanding
a hundred worlds
to discover
a hundred worlds
to invent
a hundred worlds
to dream.
The child has a hundred languages
(and a hundred hundred hundred more)
but they steal ninety-nine.
The school and the culture
separate the head from the body.
They tell the child:
to think without hands
to do without head
to listen and not to speak
to understand without joy
to love and to marvel
only at Easter and Christmas.
They tell the child:
to discover the world already there
and of the hundred
they steal ninety nine.
They tell the child
that work and play
reality and fantasy
science and imagination
sky and earth
reason and dream
are things
that do not belong together

And thus they tell the child
that the hundred is not there.
The child says:
No way. The hundred is there.

Loris Malaguzzi (1920-1994)

*Translated by Lella Gandini
Appendix 3

PYP Transdisciplinary Themes (ELC is required to cover four themes, of which ‘Who we are’ and ‘How we express ourselves’ are compulsory).

<table>
<thead>
<tr>
<th>Who we are</th>
<th>Where we are in place and time</th>
<th>How we express ourselves</th>
<th>How the world works</th>
<th>How we organize ourselves</th>
<th>How we share the planet</th>
</tr>
</thead>
<tbody>
<tr>
<td>An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures, rights and responsibilities; what it means to be human.</td>
<td>An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives.</td>
<td>An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.</td>
<td>An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.</td>
<td>An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.</td>
<td>An inquiry into the rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Who we are</th>
<th>Where we are in place and time</th>
<th>How we express ourselves</th>
<th>How the world works</th>
<th>How we organize ourselves</th>
<th>How we share the planet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>189</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| E1 class (3-4 year olds) | Everyday I can learn about who I am with and through others.  
1. How I am growing and changing in my awareness of myself  
2. Myself as a part of a group | We use our ‘Hundred Languages’ to express ourselves.  
1. How a variety of media can be used to express our ideas  
2. How to organize ideas in order to resent them to others | Light is all around us and behaves in many ways.  
1. Where we find light (natural and artificial light)  
2. Characteristics of light  
3. How light behaves with introduced materials | We can learn to look after our environment by observing and appreciating living things.  
1. Living things: what they are  
2. How to care for living things  
3. How living things change |
<table>
<thead>
<tr>
<th>Who we are</th>
<th>Where we are in place and time</th>
<th>How we express ourselves</th>
<th>How the world works</th>
<th>How we organize ourselves</th>
<th>How we share the planet</th>
</tr>
</thead>
</table>
| We need to understand and love ourselves in order to love and understand other people.  
1. Similarities/differences between self and others  
2. How we build lasting relationships  
3. How our families influence who we are | Stories give us pleasure and help our imagination grow.  
1. Our favorite stories  
2. Retelling and recording of familiar stories  
3. Creating and expressing our own stories | The environment is natural and built  
1. Distinguishing between natural and built features of the environment  
2. How people use and care for familiar natural and built environment  
3. Interrelationships between natural and built environment | Change is inevitable and affect our lives.  
1. Change affects our lives  
2. The transition we make from ELC into the main school |
## Appendix 4

Results of the interview in table format

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Interpretation of the model</th>
<th>Resistance to the model</th>
<th>Inviting aspect of the model</th>
<th>How to construct a provocation</th>
<th>Interpretation of ‘scaffold’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher 1</td>
<td>Beginning can be anywhere; everything is interconnected; all to do with negotiation; importance of environment</td>
<td>terminology</td>
<td>The model looks too complicated</td>
<td>No single answer; many ways – can come from the child, from a class meeting, a unit of inquiry; comes in many forms and there is a necessity to be open-minded</td>
<td>Move child forward based on prior knowledge; can only move when the child is safe and secure</td>
</tr>
<tr>
<td>Teacher 2</td>
<td>Continuous, on-going and workable; useful tool for the parents to be aware of the process</td>
<td>None; something we do all the time</td>
<td>provocation</td>
<td>Setting up materials, the environment, posing questions, not only verbally but by placing an object, for e.g.; can come from the child as well</td>
<td>Building from children’s previous knowledge, offering challenges, engaging them in their interests, taking them a step further, something the child doesn’t know yet; a challenge – which aspect to give value to, with what method? Do I choose, or is it something the child needs? Don’t look at documentation enough to scaffold.</td>
</tr>
<tr>
<td>Teacher 3</td>
<td>Useful over a Venn diagram which would be messy</td>
<td>none</td>
<td>Drawn to the center and moving out</td>
<td>Child-centered; could be an object like a flower, to see the response of the child; need to move closer to the child rather than the child becoming more grown up</td>
<td>Like a building, taking the child to elevated steps; children do it amongst themselves</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Teacher 4</td>
<td>Interlinking of all aspects, like a mind map</td>
<td>none</td>
<td>All of the areas</td>
<td>No one simple way; an object could provide the provocation</td>
<td>Pushing the boundaries of one’s knowledge</td>
</tr>
<tr>
<td>Assistant 1</td>
<td>Circular aspect is inviting; 4 areas are equally weighted</td>
<td>none</td>
<td>Scaffolding; it makes me ask questions – how can I be more proactive? Do I notice the colorless child?</td>
<td>Need to think if one provocation is more important than another; need to analyze the provocation and look at all factors – number of children it will involve, time constraints, etc.</td>
<td>Knowing when to insist on something, a moment that holds up a child</td>
</tr>
<tr>
<td>Assistant 2</td>
<td>An idea can go anyway, once something starts happening, leads back to the inquiry, it can be the teacher’s frame or the</td>
<td>none</td>
<td>Provocation and documentation, when it all starts</td>
<td>By listening; giving the children the chance to expand on the first idea they come up with</td>
<td>How far to take on what the child has said; to build on it; talking with others and decide how far to take it and ask the worth of pursuing it</td>
</tr>
<tr>
<td>Assistant 3</td>
<td>It is circular and all areas are interwoven; arrows go both ways because the interaction is mutual</td>
<td>none</td>
<td>All the areas and how everything is interrelated.</td>
<td>The cues come from the children; need to think carefully so as not to sway the children’s ideas</td>
<td>Seeing child involved in something and setting up provocations to support their learning and expand their experience</td>
</tr>
</tbody>
</table>

child’s
Appendix 5

Detailed accounts of the portfolio
To extend on the definition of a portfolio, 4 aspects were considered:

1. portfolio, as offering visibility to the children, parents and teachers
2. ways in which documentation is delivered through the portfolio
3. when documenting, to be mindful of 3 elements as value – symbolic, action, and the environment – on the theoretical and practical level
4. what to actually document – planned inquiries/moments and incidental inquiries/moments and possible process of inquiries

1. The portfolio offers visibility to the children, parents and teachers in the following ways:

<table>
<thead>
<tr>
<th>To the children in relation to and learning with others:</th>
<th>To the parents:</th>
<th>To the teachers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>this is me</td>
<td>the potentials of your child</td>
<td>reciprocal learning</td>
</tr>
<tr>
<td>this is what I can do</td>
<td>the competencies of your child</td>
<td>reflexive thinking</td>
</tr>
<tr>
<td>this is what I think</td>
<td>the resourcefulness of your child</td>
<td>communication (children, parents, teachers)</td>
</tr>
<tr>
<td>this is what I believe/value</td>
<td>the process of learning</td>
<td>co-construction for on-going experiences</td>
</tr>
<tr>
<td>this is what I know</td>
<td>the role of the teachers</td>
<td>contexts for extending learning</td>
</tr>
<tr>
<td>these are my questions</td>
<td>contexts for learning</td>
<td></td>
</tr>
<tr>
<td>these are things that I wonder about</td>
<td>the wonders of children</td>
<td></td>
</tr>
<tr>
<td>these are the strategies I use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>these are my ordinary, but extraordinary moments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. How is documentation delivered within the portfolio?

- proformas
- Storyboard (writing with photo to show process)
- Transcript of children’s voices (significance, when to use…)/adults’ voices
- Photos
- CDs, DVDs
- Drawings/paintings
- Poetry

* methods for documentation include slideshows, MP3s, iPods, videos, but these are not necessary included in the portfolio.
3. Extending children’s learning: (concept of scaffolding)

We believe a balance of all 3 values are important on both the philosophical/theoretical level and practical level

<table>
<thead>
<tr>
<th>Symbolic (with us)</th>
<th>Action (with us and in spite of us)</th>
<th>Setting the environment (with us and in spite of us)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on language/literacy/poetic languages</td>
<td>Asking a more competent other to help</td>
<td>Physical/Conceptual space</td>
</tr>
<tr>
<td>e.g. when working with clay, using words as ‘slab’, ‘coil’, ‘chapati’, by dialoguing</td>
<td>e.g. ways of skipping rope</td>
<td>e.g. conceptual space - space offered to explore own identity in relation to others without intimidation</td>
</tr>
<tr>
<td>e.g. on lines of making crowns: who wears crowns? what if...a tree wears a crown? what if...a Nike shoe box wears a crown?</td>
<td>e.g. skills of using scissors/hammer, etc and care of materials</td>
<td>e.g. physical – providing materials (clay, pencils, paper, etc) aesthetically</td>
</tr>
<tr>
<td>e.g. light and shadow</td>
<td>e.g. child playing piano and providing ‘a book’ as notes</td>
<td></td>
</tr>
<tr>
<td>e.g. sounds</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. What to document?

Taking opportunity to cross disciplines/Bearing in mind the ‘moments’ may tie in/and or instigate inquiries:

<table>
<thead>
<tr>
<th>Moments – incidental (small group/whole group)</th>
<th>Moments – planned (small group/whole group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. cherry blossom petals fluttering down like snowflakes</td>
<td>e.g. specific unit of inquiry</td>
</tr>
<tr>
<td>e.g. a child attempting to go down a slide for the first time</td>
<td>e.g. cultural presentations</td>
</tr>
<tr>
<td>e.g. an unexpected visitor, like a lizard</td>
<td>e.g. physical education session</td>
</tr>
</tbody>
</table>

A possible process of an inquiry:

- Framing the question(s) of children/teacher
- Listening to the voices of children
- Reflecting through initial documentation (in dialogue with colleagues)
- Plan a pathway/focus of inquiry
- Think of the teachers’ role in providing meaningful context to extend learning
- Presenting final documentation
Appendix 6

Transcription from the Visitors’ Book
(Translation from Japanese to English by author of this thesis)

Page 1:
“What beautiful photos!”
“I enjoyed viewing the exhibition. I am astonished by so many beautiful photos – cannot be depicted from an adult’s point of view.”

Page 2:
“I am reminded of all the joys of childhood I experienced. Thank you for this beautiful ‘time’.”

“Congratulations on a wonderful exhibition. Amazing what children can do!”

Page 3:
“I remembered all the places I used to like as a child. I reminisce the sense of excitement I felt as a child of the ordinary moment. Thank you.”

“I am overwhelmed. Thank you.”

Page 4:
“A beautiful exhibition. I was unaware that digital cameras can offer such an impact to adults on the views and perspectives of children. I have a boy who just turned 2. I am looking forward to seeing what photos he will take when he is 4. The layout of the exhibition is very beautiful.”

“I think it is very beautiful. The photos are fantastic. Thank you very much.”

Page 5:
“By viewing the photos, I was reminded of looking up at the sky as a child. So many
beautiful colors shining. I value the blinding beauty of the natural world. I look forward to another exhibition.”

“It is truly hard to believe these photos, which reveal so much, were taken by 4 year olds. I wish the children will take with them this spirit in whatever they do. From an elderly person.”

Page 6:
“I feel life and strength in the photos, and they are beautiful. I believe in the ‘hundred languages’…I have become to like the poem very much. Thank you.”

“The ‘Flower Party’ [name given to the mural] represents such purity, it soothes my feelings. Each of the claywork also reveals each one’s thoughts and feelings. Thank you very much.”

Page 7:
“I felt freedom, which does not exist in Japanese education. The children’s pure and straightforward feelings are revealed – truly fantastic.”

“I felt children were given space to express how they truly feel. I felt joyful. Thank you very much.”

“Children’s view and perception of the world…I had forgotten about this…Thank you for this opportunity to remember again.”

Page 8:
“I was able to feel the possibilities of children strongly. I think it is a fantastic exhibition.”

“A powerful and colorful palette of possibilities exhibited by children.”

“It is hard to believe the photos were taken by 4-5 year olds. I am amazed at the aesthetic sense of the children, unyielding to professional photographers.”
Page 9:
“Hard to believe the deep feelings 4-5 year olds can have – thank you very much.”

“Children’s perceptions through photos, I found it very interesting. Fantastic!”

“Hurrah digital cameras!! Nice work.”

Page 10:
“It was fun! I was amazed that children’s view were not so different to the adult’s (in a good sense).”

“The photographs, the person who is being photographed – both have such kind eyes – the colors of the mural reveal their spirit – take care, I always pass by your school.”

Page 11:
“Everybody is so skillful! I am happy I came here. Thank you.”

“I was happy to be able to see the expressions of children around the world.”

“It is hard to believe the photos were taken by children, their work is fantastic. I felt warmth…thank you.”

“It was fun to see different photos and drawings!!”

Page 12:
“I like it.”

“I think the ‘Flower Party’ [the name given to the mural] is very nice.”

Pages 13-14:
Signatures of classmates and teachers.
Page 15:
“This is a wonderful exhibition, a very good job. Congratulations to all.”

“Great photos by our small flowers – we shall all take responsibility for them to grow big and beautiful and take care of our poor planet.”

Page 16:
“I have enjoyed my walk through the garden you have created. Bright and colorful like all of you.”

“This garden is the most memorable place that took my breath away in which felt like a shower of god’s blessing to mankind.”

“I like the art that the small children made.”

Page 17:
“I have a good time.”

“Beautiful works! Thank you.”

“Your production is very nice.”

Page 18:
“I enjoyed it very much. Thank you for the sense of love and warmth.”

“I think it is truly fantastic.”

“It is very beautiful.”

“The [photos] children’s views were beautifully taken.”
Page 19:
“It is very beautiful.”

“It is lovely, fantastic!”

“Please continue the growth of the international circle. Good luck.”

“The title, ‘Reflection’, and the leaves floating on water truly reveal the emotions, it was as if it was a mirror of one’s feelings.”

Page 20:
“The ordinary, mundane things came to life and shined through the photos – fantastic.”

“It is hard to believe the photos were taken by young children. I felt their viewpoints are different.”

“Thank you for the postcards!!”

Are they professional photographers? Background music is so nice. Thank you.”
“Children’s perception of the natural world shines purely – fantastic.”

Page 21:
“All the work is beautiful. The postcard is so sweet. I liked the ‘Flower Party’ the most!”

“The way the photos were taken, it cannot be done by adults. It can only be done by children’s aesthetic sense. Very interesting.”

“Fantastic.”