Spring 2015

# Lev Vygotsky Speaks: Early Childhood Curricula

Dakota L. Gagliardi
*James Madison University*

# Lev Vygotsky Speaks: Early Childhood Curricula

An Honors Program Project Presented to

the Faculty of the Undergraduate

College of Education

James Madison University

by Dakota Leigh Gagliardi

May 2015

---

Accepted by the faculty of the Department of Early, Elementary and Reading Education (EERE), James Madison University, in partial fulfillment of the requirements for the Honors Program.

FACULTY COMMITTEE:

Project Advisor: Dorothy Sluss, Ph.D.,
Professor, EERE

Reader: Susan Barnes, Ph.D.,
Associate Professor, EERE

Reader: Shin Ji Kang, Ph.D.,
Assistant Professor, EERE

HONORS PROGRAM APPROVAL:

Philip Frana, Ph.D.,
Interim Director, Honors Program

---

PUBLIC PRESENTATION

This work is accepted for presentation, in part or in full, at the Virginia Association for Early Childhood Education (VAECE) Conference in Richmond, Virginia on March 21, 2015.

## ACKNOWLEDGMENTS

I would like to thank Dr. Dorothy Sluss, Dr. Susan Barnes, and, Dr. Shin Ji Kang for their extraordinary support throughout this process. Your expertise and encouragement proved invaluable in the successful completion of my senior honors thesis. Thank you Dr. Sluss for providing me with the necessary skills and confidence to trust my ideas and see this project through to the end; you have been an incredible mentor. Concluding this process with a public presentation at the Virginia Association for Early Childhood Education (VAECE) conference in Richmond, Virginia on March 21, 2015, is an experience I will always cherish. Thank you Dr. Sluss for believing in me enough to take that step with me.

I would also like to thank Jared Diener and Dr. Phil Frana, two individuals who exemplify what it means to be part of the James Madison University Honors Program every day. Thank you both for never giving up on the Program and thank you for never giving up on me. You were both there when I needed support and encouragement the most and I will never be able to thank you enough. I can confidently say the Honors Program would not be what it is today without both of you amazing individuals.

Last but not least I would like to thank my mother, Sherri Stoeffler. You have always supported me and made me believe that anything is possible, without you I would not be the person I am today.

Each step of this journey has provided me with a new skill and new level of confidence I never dreamed of achieving. Each and every one of you has played a hand in my success; I could not be more appreciative. Thank you!

TABLE OF CONTENTS

# LIST OF TABLES

## ABSTRACT

Early childhood curricula have become a major source of conversation in recent decades. The desire for growth and reform in the education field has contributed to changing tides in the classroom, leading to more child-centered approaches that are believed critical in the acquisition of holistic development. Two such curricula that have received recent attention are Reggio Emilia and Tools of the Mind, both of which stem from the foundational beliefs of Russian psychologist Lev Vygotsky. It is the aim of this paper to analyze both Reggio Emilia and Tools of the Mind in terms of how they compare to Vygotsky's sociocultural theory of development. Due in large part to the interpretation of his theoretical components, these two models have caught the attention of early childhood education leaders and scholars. However, the degree to which Vygotsky is represented in each curriculum remains up for discussion. It is through the intentional promotion of strong social environments and the development of necessary cognitive skills that a curriculum model could actualize the beliefs of Vygotsky. Additional research to understand what this might involve is certainly worth further analysis.


*Keywords:* child development, early childhood curriculum, Lev Vygotsky, Reggio Emilia, Tools of the Mind

# CHAPTER ONE

# EARLY CHILDHOOD CURRICULA

Child development is an area of study devoted to understanding the growth and changes of children from conception to adolescence in all domains, including physical, social, emotional, cognitive, and language. There is significant diversity among the many scholars who study child development, however they all share a common goal to "describe and identify the factors that influence the consistencies and changes in young people during the first two decades of life" (Berk, 2012, p. 4). The study of child development has sparked countless early childhood curricula in an attempt to provide the most comprehensive and effective approach to teaching and learning.

## Curriculum Models

According to The National Association for the Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE) "curriculum is a complex idea containing multiple components, including: goals, content, pedagogy, and instructional practices" (2003, p. 6). Curriculum is influenced by many factors, such as society's values, content standards, accountability systems, research findings, community expectations, culture and language, and individual children's characteristics (NAEYC & NAECS/SDE, 2003). The NAEYC and the NAECS/SDE formed a joint position statement declaring what constitutes high-quality early childhood curriculum, assessment, and program evaluation. In 2003, the official statement of NAEYC and NAECS/SDE declared that "policy makers, early childhood professionals, and other stakeholders in young children's lives have a shared responsibility to: 1) construct comprehensive systems of curriculum, assessment, and program evaluation; 2) implement curriculum that is thoughtfully planned, challenging,

engaging, and developmentally appropriate; 3) make ethical, appropriate, valid, and reliable assessment a central part of all early childhood programs; 4) regularly engage in program evaluation guided by program goals; and 5) provide the support, professional development, and other resources to allow staff in early childhood programs to implement high-quality curriculum, assessment, and program evaluation practices" (NAEYC & NAECS/SDE, 2003, p. 2).

Prior to the formal publication and enforcement of the NAEYC and the NAECS/SDE standards of high-quality curriculum, assessment, and evaluation numerous early childhood programs were already being successfully implemented worldwide. Since this paper aims to compare two approaches to early childhood education, Reggio Emilia and Tools of the Mind, it is important to be aware of successful pre-existing curriculum approaches. Such successful models include Montessori, High/Scope, Creative Curriculum ®, Waldorf, and Bank Street, each of which take a distinctive approach to supporting early childhood development through a variety of instructional practices and tools.

**Montessori**

The Montessori method is a child-centered approach that values both "social progress and human progress" (Montessori, 1909, p. xii). This program was founded by physician Maria Montessori in 1907 in the slums of Italy and was originally intended for poverty-stricken children. According to Berk (2012), child-centered programs, similar to the Montessori method, require teachers to provide activities from which children can select freely, while also focusing on learning through play. Interest-driven activities and the presence of free play promote exploration and discovery in a rich environment that includes "multiage classrooms and specially designed materials" (Berk, 2012, p. 348). Montessori education views the child as one who is eager for knowledge and capable of creating learning opportunities (Montessori, 1909). This

model has gained significant popularity among education professionals throughout the world over the past several decades.

**High/Scope**

High/Scope is a preschool model that was founded in the 1970's as a result of the work of Dave Weikart and Connie Kamii with the Perry Preschool Project. The Perry Preschool Project involved teachers working with children a few hours a day at school, attending staff meetings, and making weekly home visits. The overall purpose of this study, and subsequent curriculum model, was to provide a proactive approach to early education that would assist in the prevention of school failure in high school students from even the poorest areas. A report published by Schweinhart et al (2005) revealed two years' exposure to cognitively enriching preschool was associated with increased employment and reduced pregnancy and delinquency rates in adolescence. Over the years, High/Scope has proven the benefits of early intervention for at-risk children.

**Creative Curriculum ®**

Creative Curriculum ® is an early childhood model that was developed by Diane Trister Dodge in 1979, in an effort to assist teachers in making their practices consistent with their goals for children. This curriculum draws from the work of several notable psychologists and theorist in an effort to facilitate a well-rounded approach to professional development of early childhood educators. Such contributors include Abraham Maslow, Erik Erikson, Jean Piaget, Lev Vygotsky, Howard Gardner, and Sara Smilansky, all of who made significant contributions to the field of education (Dodge, Colker, & Heroman, 2002). Creative curriculum ® aims to promote the development of children's social competence through a specific classroom organization that is supportive of teachers' developmentally appropriate practices and children's

active learning (Dodge, Colker & Heroman, 2002). This system requires teachers to arrange the learning environment into ten interest areas including: art, blocks, cooking, computers, house corner, library corner, music and movement, the outdoors, sand and water, and table toys.

**Waldorf**

Waldorf curriculum was based on Rudolf Steiner's philosophy that each child is a unique individual who seeks to learn and grow by experiencing the "path of earthly life" ("Waldorf Early Childhood Association of North America", 2015). The first Waldorf School was founded in 1919 in Germany and has since expanded to independent schools and educational programs worldwide. Teachers play a vital role in the success of this model, as their main objective is to assist children in continuing their earthly journey into life in a healthy way through an ever-deepening understanding of the human being in body, soul, and spirit.

**Bank Street**

In contract, Bank Street curriculum was largely influenced by the educational philosophies of John Dewey, Jean Piaget, Erik Erikson, and Lucy Sprague Mitchell. This curriculum model is a developmental interaction approach that stresses that the optimal educational process maximizes children's direct and rich interactions with a wide variety of materials, ideas, and people in their environment (Hesse-Biber & Nagy, 2011). Bank Street, which is named after the Bank Street College of Education in New York City, places a large emphasis on the importance of developing the whole child through active learning. This model of early childhood education utilizes psychodynamic theory, while simultaneously allowing teachers the freedom to use their own judgment about educational practices in light of their understanding and observation of children's development (Biber, 1984).

Each previously discussed curricula bases their goals and pedagogy on the ideas of preceding educational theorists and fundamental beliefs about early childhood, ensuring unique and individualized education programs. It is important to know where early childhood curriculum has been, in order to understand the progressions of the development of such programs. Two additional curricula not yet discussed are Reggio Emilia and Tools of the Mind. Both of these curriculum models attempt to facilitate holistic development through specific theory and practice based on Russian psychologist Lev Vygotsky. Understanding how Reggio Emilia and Tools of the Mind specifically borrow from Vygotsky's framework and where they do not, adds to the knowledge base of early childhood curriculum models. We begin this process with an investigation of the work of psychologist and educational innovator Lev Vygotsky.

# CHAPTER TWO

# LEV VYGOTSKY: PSYCHOLOGY TO PEDAGOGY

## Personal Background

Lev Semenovich Vygotsky was born in 1896 in the town of Orsha, Belorussia in northern Russia, to a middle-class Jewish family (Wink & Putney, 2002). Vygotsky's young life was central in developing his perceptions of the sociocultural context on development as his days were filled with a wide diversity of books, ideas, and conversations. Despite severe discrimination that came with being Jewish in Russia during this time, his nurturing home life and strong family structure would go on to influence his work in psychology and pedagogical developments.

Vygotsky's family was essential in his early development. His father was a very educated man working as a manager with the United Bank of Gomel, as well as a philanthropist within the local community. In addition to the sophisticated educational and civic examples set by his father, his parents were intentionally supportive of his acquisition of language and knowledge as demonstrated by his rather "unconventional" educational journey. He began his studies with a private tutor before enrolling in a Jewish Gymnasium at the junior high level where he would later graduate with honors and a gold medal. Throughout his adolescent life, Vygotsky proved he was a very gifted child who believed knowledge was nothing if it were not shared. This early passion to share knowledge fueled his desire to study the humanities and social science at the university level and later become a teacher. Unfortunately at this time in Russia, university study in these disciplines was not allowed for those who practiced the Jewish faith. Due to this ethnic barrier, Vygotsky's parents sent him to university under the assumption that he would study medicine and go on to become a medical doctor. Not long after being at university he switched

fields to study law with a focus on philosophy and psychology, as well as literary criticism. This new path of study was essential in setting the stage for future innovations in the social sciences.

When Vygotsky graduated from university at the time of the Russian Revolution, he returned home to Gomel, Russia to care for this mother and youngest brother who were suffering from tuberculosis. Fortunately, not too long after he returned home Russian rule was reinstated and ethnic barriers were lifted. This allowed him to utilize his education in the humanities and social sciences and go on to teach literature, aesthetics, philosophy, Russian language, psychology, and logic (Wink & Putney, 2002).

## Psychological Developments

### Search for a New Psychology

When Vygotsky completed his formal education, he dedicated his life to the search for a "new psychology." Vygotsky opposed Ivan Pavlov's current beliefs of behaviorism, which stated that psychology should solely focus on observable behaviors of people and not concern itself with unobservable events that take place in the person's mind. In an effort to provide an alternate perspective to behaviorism, Vygotsky began research on the consciousness (or the mind), in which he formulated ideas that humans used tools and sign systems to transform themselves and to reshape cultural forms of society (Vygotsky & Kozulin, 1986). This research was one of his first major contributions to psychology and laid the groundwork to his ideas surrounding the importance of the social environment.

### Innatist Reductionism

Following this development, Vygotsky continued on to prove that higher mental functions are socially, culturally, and historically constructed rather than genetically determined, through a process known as *innatist reductionism* (Wink & Putney, 2002). According to

Vygotsky, these "higher" or cultural functions are specifically human and appear gradually in a course of radical transformation of the lower functions, whereas "lower" or elementary functions can be described as natural mental functions such as perception, spontaneous or associative memory, reactive attention, and will (Vygotsky & Kozulin, 1986, p. xxv). Overall, Vygotsky was able to conclude that the study of psychology must take into account the role of the consciousness in development, while recognizing the cultural, social, and historical basis of psychological functioning. This finding suggests that more contributes to development than just the behaviors that can be observed, as indicated by behaviorism, providing that alternate perspective he was searching for.

**Pseudoconceptual Thinking**

As a result of his work with the socially and culturally constructed consciousness, Vygotsky conceptualized the notion of *pseudoconceptual thinking* as related to mental functions. This type of thinking is a form of a child's reasoning that phenotypically coincides with reasoning in the adults and yet has a different, preconceptual nature (Vygotsky & Kozulin, 1986). Pseudoconceptual thinking leads to two types of experiences, "scientific" and "spontaneous." "Scientific experiences originate in the highly structured and specialized activity of classroom instructions and impose on a child logically defined concepts, while spontaneous experiences emerge from the child's own reflections on everyday experience" (Vygotsky & Kozulin, 1986, pp. xxxiii-xxxiv). It is through these two types of experiences that Vygotsky recognized the vital importance of the social environment on development, as "concepts evolve under the conditions of systematic cooperation between the child and the teacher" (Vygotsky & Kozulin, 1986, p. 149). He believed social interactions were critical for the acquisition of mental

processes, as well as the notion that higher mental functions are learned through socially shared cognition.

**Systematically Organized Learning and the ZPD**

Furthermore, Vygotsky established a form of learning responsible for concept formation, known as *systematically organized learning* in an educational setting (Vygotsky & Kozulin, 1986, p. xxxiv). Through this method of study Vygotsky began to interpret concept formation as a one-sided process, which did not directly align with his previous research. To avoid this conflict, he began a study of the dialogical character of learning, which eventually led to the formation of the zone of proximal development. The zone of proximal development (ZPD), or the *zo-ped,* "is a place at which a child's empirically rich but disorganized spontaneous concepts 'meet' the systematicity and logic of adult reasoning" (Vygotsky & Kozulin, 1986, p. xxxv). This unique adult-child relationship requires children to expand their understanding to that of the involved adult, resulting in the internalization of a child's own reasoning and substantial intellectual growth. This Vygotskian development would go on to influence adult-child relationships for decades, as seen in countless curriculum models across the educational world.

## Transition towards Pedagogy

Following Vygotsky's extensive amount of research on psychological development during the child's early years, he began the transition from psychology to educational pedagogy. During this transition Vygotsky used the metaphor of water to explain his perceptions of teaching, learning, and development within the sociocultural context. Vygotsky explained the relationship between the child and the environment by detailing the functions of the two hydrogen atoms and one oxygen atom of $H_2O$ while separated, as opposed to when they are joined together to form a water molecule (Vygotsky & Kozulin, 1986). When the two hydrogen

atoms or the oxygen atom is faced with the task of independently extinguishing a fire it is not possible, as they would just add to combustion. However, when the atoms are brought together to form a water molecule, they can easily extinguish the fire. “Just as one cannot separate water into its distinct parts and still maintain the integrity of water, one cannot separate the individual from the context and still have a complete understanding of either” (Wink & Putney, 2002, p. xii).

**Sociocultural Theory**

Throughout Vygotsky’s research, he continuously supported the vital importance of the social environment, as he believed that individual consciousness is built from “outside through relations with others” (Vygotsky& Kozulin, 1986, p. xxiv). Vygotsky suggested that the overarching goal of child development is the acquisition of language, which he believed to be both a socially and cognitively constructed process. Finally, after much research and controlled application, Vygotsky provided a culturally and socially mediated theoretical approach to child development that focused on how culture including the values, beliefs, customs, and skills of a social group, is transmitted to the next generation, known as his Sociocultural Theory of Development (Vygotsky & Kozulin, 1986). There are two essential components in this Vygotskian framework including: 1) the presence of a rich socially and culturally mediated environment, and 2) the successful development of cognitive components including higher mental functions and self-regulation.

**Language development.** One primary aspect of Vygotsky’s sociocultural theory is the development of language. Language development is an umbrella component of Vygotsky’s theory that is related to both the social and cognitive processes. In Vygotsky’s view, “the child and the social environment collaborate to mold cognition in culturally adaptive ways” and once the child begins to acquire language, this environment grows exponentially (Berk, 2012, p. 329).

Vygotsky's research on language acquisition is based on the constructivist learning theory where children acquire knowledge based on social experiences. Additionally, he declared that higher mental functions must be viewed as products of mediated activity, where psychological tools and means of interpersonal communication play the mediator. According to Vygotsky, "the medium is beside the point [in language]; what matters is the functional use of signs, any signs that could play a role corresponding to that of speech in humans" (Vygotsky & Kozulin, 1986, p. 76). The ability to express oneself, through whatever means possible, gained significant importance as a mental tool necessary for the development of social relationships, higher mental functions, and self-regulation. As soon as a child begins to communicate with his or herself, through a process called private speech, their thinking becomes more complex and they begin to learn how to control their own behavior. This self-directed speech helps children guide their own behavior and can be viewed as the foundation for all higher cognitive processes, including controlled attention, deliberate memorization and recall, categorization, planning, problem solving, and self-reflection (Berk, 2012). With age and experience private speech internalizes and eventually turns to muffled whispers and lip movements, signaling significant developmental gains. It is for these reasons that language development is one component of Vygotsky's sociocultural theory that is both socially and cognitively determined throughout early childhood.

**The social and cultural context.** Vygotsky knew the social context had a large influence over the child when he refuted Pavlov's theory of behaviorism, so he looked to Bronfenbrenner's Ecological Development model to support this thinking. Urie Bronfenbrenner was born in 1917 in Moscow, Russia and is the creator of this Ecological Systems Theory, which organizes the social environment into five, distinct levels including the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem, all of which affect development (Berk,

2012). Bronfenbrenner believed that in order to understand human development, one must consider the entire social system in which growth occurs and understand that a child is developing within a complex system of relationships (Bronfenbrenner, 1994).

The microsystem is the innermost level of the environment, consisting of activities and interaction patterns in the child's immediate surroundings (Berk, 2012). An important aspect of the microsystem is that every relationship is "bidirectional." This means that adults affect children's behavior and in turn children's biological and socially influenced characteristics affects adult's behavior. For example a friendly child is more likely to evoke a positive and patient reaction from their parents, as opposed to a child who cries a lot or misbehaves. Third parties and their actions are also involved in the child's microsystem, such as parental or caregiver interactions. Parents or caregivers who support each other's child-rearing practices will have a positive affect on their child, while divorced parents or parents experiencing constant conflict between each other are more likely to evoke fear and anxiety from their child.

The next level of the Bronfenbrenner model is the mesosystem. This level encompasses connections between microsystems, "such as home, school, neighborhood, and child-care centers" (Berk, 2012, p. 26). While a child will learn and grow from these experiences such as school, health and wellness, and social relationships with peers and other adults, their development is most effective when the parents or caregivers carry this attention back to the home. This level mostly focuses on family relationships and the amount of involvement and support the child receives.

The third level of Bronfenbrenner's model is the exosystem, which consists of social settings that do not contain children but that nevertheless affect children's experience in their immediate settings. These experiences can be either formal or informal. Formal organizations

such as parents' workplace, religious institutions, or welfare services would affect the child in terms of work schedules, which could determine how often a parent would see their child, or religious beliefs which could potentially influence what type of parent they will strive to be. Informal organizations such as extended family member who provide advice or financial support, could also drastically impact the life and development of a child in terms of living arrangements, food availability, and medical care.

The outermost level of the model is the macrosystem. The macrosystem consists of the overarching pattern of micro-, meso-, and exosystem characteristic of a given culture or subculture, with particular reference to "the belief systems, bodies of knowledge, material resources, customs, life-styles, opportunities structures, hazards, and life course options that are embedded in each of these broader systems" (Bronfenbrenner, 1994, p. 40). This level can directly impact how a child's needs are met at each other level.

The final level of Bronfenbrenner's model of development is the chronosystem. The chronosystem is a temporal dimension that is the underlying influence of a child's development. In the ecological systems theory, development is neither entirely controlled by environmental circumstances nor driven solely by inner dispositions. Rather, children and their environment form a network of interdependent effects. Examples of a chronosystem event could include the divorce of parents, the birth of a sibling, or an elderly family member moving into the home.

Bronfenbrenner's Ecological Systems model solidifies the belief that no two children are the same; therefore no two children will learn or develop the same. The importance of the social context on a child's overall development is proven more critical than ever, as Bronfenbrenner envisioned and created as a series of interrelated, nested structures that form a complex functioning whole, or system.

***Social situation of development.*** As demonstrated by Bronfenbrenner's Ecological Systems model, each individual exists in his or her own unique social and cultural realms, referred to by Vygotsky as the *social situation of development*. The *social situation of development* is defined as a "unique relation, specific to a given age, between the child and reality, mainly the social reality that surrounds him" (Bodrova & Leong, 2007, p. 96). According to Vygotsky's framework he believes that children are constantly constructing their own understandings and not just passively reproducing what is presented to them. This process of constructing knowledge is always socially mediated and requires the appropriate implementation of both physical manipulation and social interaction.

***Cultural awareness.*** In addition, the development of cultural awareness is more than just the acquisition of certain attitudes and beliefs; it stretches to include everything in the child's environment that has been either directly or indirectly influenced by culture. Taking the specific cultural context of the individual child into account is crucial, as the human mind is the product of both human history, or *phylogeny,* and a person's individual history, or *ontogeny* (Bodrova & Leong, 2007). This is why Vygotsky's Sociocultural Theory is often referred to as the Cultural-Historical Theory. Cultural evolution is a key mechanism that shapes further development. Through culture, one generation passes knowledge and skills on to the next, and each subsequent generation adds new things and thus the cumulative experience and information of the culture are passed on to succeeding generations.

***Social-constructivism.*** At the core of Vygotsky's work is the idea that child development is the result of interactions between children and their social environment. This belief is often classified as an early form of social-constructivism, as the social world has a profound influence on how and what we think overall molding our cognitive processes. Interactions under social-

constructivism commonly involve parents, teachers, playmates, schoolmates, and siblings, all of which are responsible for building a culture of artifacts, such as books and toys, with shared meaning (Bredekamp, 2014). To encourage these collaborative relationships, Vygotsky required that all social interactions have two vital features: intersubjectivity and scaffolding. Intersubjectivity is "the process by which two participants who begin a task with different understandings arrive at a shared understanding, creating a common ground for communication" (Newson & Newson, 1975). When working with an adult in this setting the child is expected to stretch their understanding to a more mature perspective. The second important feature of social experience is scaffolding, which is defined as "adjusting the support offered during a teaching session to fit the child's current level of performance" (Berk, 2012, p. 331). As a child develops, "the scaffolders gradually withdrawal support resulting in the child then taking the language of these dialogues, making it part of their private speech, and using that speech to organize their independent efforts" (Berk, 2012, p. 330). These two components of a productive interaction, intersubjectivity and scaffolding, should occur in the child's ZPD to optimize cognitive development.

**The cognitive component.** The social context is responsible for establishing the child in mutually supportive relationships with shared meaning and a common purpose, therefore preparing that child for future social wellness. In addition to the social context, the development and maturity of cognitive processes have proven equally important during early childhood. Vygotsky classified this component of development into the acquisition of higher mental function and the solidification of self-regulation, both of which to be primarily supported by make-believe play.

***Higher mental functions.*** Vygotsky's initial concept of higher mental function focused on the transformation of lower, or elementary functions into higher functions under the influence of psychological tools (Vygotsky & Kozulin, 1986, p. xxxi). To review, lower mental functions are common to both higher animals and human beings, and include cognitive processes such as "memory, attention, perception and thinking," while higher mental functions are deliberate, mediated, and internalized cognitive processes acquired through learning and teaching and are characteristic to humans only (Wertsch, 1985, p. 24). This more advanced level of cognitive processes includes tasks such as mediated perception, focused attention, deliberate memory, and logical thinking, all of which have proven vital to intellectual success in and beyond childhood. The primary difference between elementary and higher functions is "the former are subject to the control of the environment, whereas the latter are subject to self-regulation" (Wertsch, 1958, p. 25).

Vygotsky implemented four major criteria to distinguish between elementary and higher mental functions: 1) the shift in control from environment to the individual, that is, the emergence of voluntary regulation; 2) the emergence of conscious realization or mental processes; 3) the social origins and social nature of higher mental functions; and 4) the use of signs to mediate higher mental functions (Wertsch, 1985, p. 25). Due to the cognitive importance of transforming elementary functions into higher mental functions, intentional support of the ZPD was needed. Vygotskian pedagogy focused in on the ZPD through assisted discovery, which occurs when teachers guide children's learning with explanations, demonstrations, and verbal prompts, tailoring their interventions to each individual child's abilities (Berk, 2012). These purposeful interactions between a child and a more capable adult encouraged the child to

model more mature processes and expand their thinking, therefore facilitating the transformation from lower functions to higher function.

***Self-regulation.*** The development of self-regulation, or the mastering of one's behavior, is another stressed component of Vygotsky's views on cognitive development. The primary characteristic of higher mental functions is ones ability to internally regulate one's behaviors and emotions (Wertsch, 1985, p. 25). The two main types of self-regulation are cognitive and emotional. Cognitive self-regulation is the process of "continuously monitoring progress toward a goal, checking outcomes, and redirecting unsuccessful efforts, which in large part contributes to academic success" (Berk, 2012, p. 449). In addition, children simultaneously develop a sense of academic self-efficacy and confidence in their own abilities while they are practicing cognitive self-regulation. Emotional self-regulation is the ability to control the expression of emotion and is vitally important for the creation of relationships during the early years of life. "The development of effortful control, which inhibits impulses and shifting attention, is essential to this process" (Berk, 2012, p. 369). Through the mastering of one's cognition and behaviors, additional development will follow suit.

***Make-believe play.*** Make-believe play during the preschool and kindergarten years, and specifically how it facilitates an ideal social context for the development of both higher mental functions and self-regulation, is another vital factor. Play can be described as either immature or mature. Immature play generally occurs in the beginning of preschool and is characterized by action repetition, realistic use of objects, limited roles, little use of language, and play lasting no longer than 5 to 10 minutes. While mature play emerges near the end of kindergarten when children are able to "create pretend scenarios, invent props, engage in long dialogues, coordinate multiple roles and themes, solve disputes, and become fully immersed in play for long durations

of time" (Bodrova & Leong, 2007, p. 145). Research suggests that there is a strong relationship between play and specific cognitive strategies such as self-regulation, narrative recall, divergent problem solving, and rule understanding, demonstrating its importance (Bergen, 2002). Additionally, make-believe play strengthens a wide variety of mental abilities such as "sustained attention, memory, logical reasoning, language and literacy, imagination, creativity, and the ability to take another's perspective" (Berk, 2012, p. 319). It is because of these numerous cognitive benefits that make-believe play is considered to be a significant contributor in the development of higher mental functions. Teachers play a vital role in the cognitive process by providing appropriate scaffolding, allowing significant time for play, monitoring the progress of play, and much more.

The defining characteristics of Vygotsky's transition from psychology to pedagogy are the importance of the social context and the development of higher mental functions. It is because of these hallmark traits that many curricula models have attempted to replicate the successful Vygotskian framework in both theory and practice. A student of Vygotsky, Loris Malaguzzi created one such model known as Reggio Emilia, during a period of growth in Emilia Romagna, Italy.

# CHAPTER THREE

## REGGIO EMILIA

Like Vygotsky, Loris Malaguzzi believed in the importance of a strong social environment, as well as the need for consistent cognitive growth during early childhood. An early childhood curriculum created by Malaguzzi, known as Reggio Emilia, attempted to replicate these components and put forth an educational model that expanded on the core principles of Vygotsky's sociocultural theory.

Reggio Emilia is an early childhood education approach that originated in Emilia Romagna, Italy in the mid 1900's. This particular area in Northern Italy was subject to political and economic chaos following the fall of Fascism and the German retreat in 1945. It was a moment when the desire to bring change and create a new, more just world, free from oppression was inspiring women and men to gather their strength and build schools for their children with their bare hands (Hendrick, 1997, p. 3). This bold act preceded an Italian teacher's movement and spanned the 1950s and early 1960s, in the hopes of innovating education. Malaguzzi, an elementary educator and innovator familiar with Vygotsky's work, caught wind of this collective effort and was inspired. The determination of these locals encouraged Malaguzzi to merge his beliefs that children are powerful people, full of the desire and ability to grow up and construct their own knowledge, with the local education movement (Brunson, 2001). Furthermore Malaguzzi, seeing the potential value of combining his own Vygotskian-rooted beliefs with those of the locals, took responsibility for bringing the education battle to the city government to support the opening of the first municipal school. This pivotal achievement of Malaguzzi's work, as well as the passing of series of laws between 1968 and 1971 related to a comprehensive plan of free schools for children ages 3 to 6, proved monumental (Hendrick, 1997). Through these

series of laws, municipal schools for young children in Reggio Emilia grew to 19, while the building of infant-toddler centers was in full swing. After many decades of success and substantial expansion, it was recognized that in a system of 33 infant/toddler schools and preschools, Reggio Emilia was one of the ten best school systems in the world (Newsweek, 1991).

## The Social and Cultural Context

Today, Reggio Emilia is known as an early childhood constructivist approach, meaning it encourages students to have control over their own learning, with necessary teacher support. Programs similar to Reggio Emilia rely on the individual understanding the world and acting on it. This child/teacher co-constructed curriculum is based on several guiding principles, all of which place the natural development of the child in a socially rich environment at the forefront. Additionally, this curriculum advocates for cognitive growth through real-life problem-solving opportunities and authentic creative thinking and exploration experiences. The social setting is essential to the holistic development of the child; in a Reggio Emilia classroom this social environment includes the teacher, the student, the parent and the community, and the classroom environment.

### The Teacher

The adult(s) in the classroom or the teacher(s) is considered the key nurturer, guide, and researcher and is responsible for bringing the outside world into the classroom. It is believed that provoking student's curiosity stimulates the learning process, providing a comprehensive experience for young children (Hendrick, 1997). Teachers are expected to set the mood for the classroom, which is very relaxed, as the teachers do not feel the need to rush through the day or be in control of each event (Cadwell, 1997). This calm mood is demonstrated by free flowing

conversations between the teachers and the children throughout the course of the day. Lastly, teachers are required to use a variety of media to document and present the student's thinking. Documentation is the most commonly used method of communication to both the teacher and parents regarding the learning experience and overall development of each child (Hendrick, 1997). Teachers routinely take notes and photographs and make recordings of group discussion and children's play (Brunson, 2001). This process is meant to keep teachers up to date on students' thinking and flow of ideas to better plan activities. Documentation is intended to open the teachers mind to the reality of the situation, as opposed to making an unsupported judgment based on intermittent memories of the child's behavior and abilities.

**The Student**

In a Reggio classroom the child is considered an active component of the social setting and must be evaluated based on their daily interactions. Children are believed to be knowledge bearers and are encouraged to have control over their learning, emotions, and relationships. This educational philosophy is based on the image of the child as possessing strong potentials for development and as a subject of rights who learns and grows in the relationships with other. Likewise, the overall goal of this curriculum focuses on making students useful in everyday life. Due to this, the active involvement of the child is very important as they are considered the key protagonist, collaborator, and communicator when it comes to their learning and development. Students are allowed to choose their day's activities to reflect their interests and abilities, providing a window into their mind and development (Cadwell, 1997). During this opportunity for free-choice, children are encouraged to participate in make-believe play through the use of dramatic play, dress-up, puppetry, and shadow play areas set up throughout the classroom. Graphic arts areas are also heavily promoted through the vast array of classroom materials. The

use of both make-believe play and graphic arts has demonstrated significant cognitive, social, and language development among all participants.

**The Parent and the Community**

From the very beginnings of Reggio Emilia schools in Italy, the local community has taken a collective responsibility to educate and support the young children who attend these schools. This community involvement is demonstrated through parental involvement both inside and outside of the classroom, ensuring their influence over each aspect of the curriculum. Parents are vitally important to the success of Reggio Emilia, as they are often revered as the primary partners, collaborators, and advocates for their children.

**The Classroom Environment**

The physical environment of a Reggio classroom is set-up to reflect the varying degree of interests held by each of the children and is often referred to as the child's "third teacher." The environment, however, goes beyond a mere physical space and is seen as a living, changing system used for both academic and social education (Gandini, 1993). The importance of the environment lies in the belief that children create meaning and make sense of their world through problem-solving in genuine environments that support complex and ever-changing relationships (Cadwell, 1997). Malaguzzi believed that children's learning is largely dependent on their activities and available resources (Brunson, 2001). Due to this foundational belief, a typical Reggio classroom is filled with natural objects such as seashells, smooth stones, and gnarled wood pieces. Teachers are responsible for maximizing the environment's potential as a developmental niche where children can acquire the skills and understandings that will enable them to successfully participate in their cultural community (New, 2007).

**Materials.** The classroom serves as a gallery of students work ranging from sculptures, paintings, and photographs, to typewritten documents all displayed on shelves throughout the classroom. The creation of student artwork stems directly from the belief that children think in multiple ways, allowing children the opportunity to symbolically represent their ideas in various forms other than basic communication (New, 2007). To facilitate the symbolic representation of ideas, the wealth of materials available in a Reggio classroom must be significant. The staggering variety of materials includes, "freshly mixed tempura paint, brushes of all shapes and sizes, paper of all colors and sizes, clay, wood, cardboard, wire, small bits of mirrors, colored glass, shells, leaves, seeds, cones, twigs, dried flower petals, sand, markers, pens, oil crayons, colored inks, ribbons, yarn, thread, buttons, sequins, black and white photographs, magazine cutouts" and much more (Cadwell, 1997, p. 23). The children begin to work with these materials around age three and should always be available for their use.

## The Cognitive Component

In addition to the social setting, cognitive growth is a primary concern in a Reggio Emilia classroom. While much intellectual development can be attributed to independent exploration and free play, more direct instruction through the use of small-group projects is also an important factor.

### Long-Term Projects

Guided instruction can be found through the use of long-term projects, which are used to facilitate real-life problem-solving and creative thinking and exploration opportunities. These projects are a collaborative effort between teachers and a small group of children that take place while the rest of the class participates in typical classroom activities. The topics of these long-term projects are selected based on academic curiosity or social concern, and are spontaneous in

nature based on where the children take the investigation (Hendrick, 1997). There is no way to predict where inquiry will take these students, helping ensure authentic learning experiences for children of varying abilities and interests.

Reggio Emilia is an internationally recognized and implemented curriculum that capitalizes on simplicity. This curriculum fosters a socially rich environment through properly equipped teachers and resources. Due to individualized planning by the teachers and the intentional set up of the classroom, children are granted the independence to explore based on their interests and abilities. Reggio deliberately promotes social and cognitive development through play-based activities and collaborative small group work, highlighting the overall goal of Vygotsky's sociocultural theory, summarized in Table 1. A second early childhood program, known as Tools of the Mind, interprets and approaches Vygotskian education somewhat differently, with a heightened reliance on make-believe play and additional non-play activities.

Table 1

*Reggio Emilia in Terms of Vygotsky's Sociocultural Framework*

| Vygotsky's Framework | Reggio Emilia |
|---|---|
| Social Environment | Children are an active component of the environment |
| | Physical environment organized based on interests and abilities |
| | Vast supply of materials available for use |
| | Independent exploration and free choice of activities |
| | Activities move at the pace of children |
| Adult Interactions | Teacher is key nurturer, guide, and researcher alongside the children |
| | Teachers bring outside world in |
| | Teacher determines the mood of classroom |
| | Parent is primary partner, collaborator, and advocate for their child |
| Peer Interactions | Free choice of activities |
| | Opportunities for play |
| | Implementation of small group projects |
| Higher Mental Functions | Development is a byproduct of exploration |
| | Long-term projects promote real-life problem solving and creative thinking and exploration opportunities |
| | Work is determined based on curiosity and social concern |
| Zone of Proximal Development | Long-term projects are teacher-led |
| Make-Believe Play | One of the many options during free-choice |
| | Dramatic play, dress-up, puppetry, and shadow play areas available |
| Self-Regulation | Cognitive self-regulation is promoted through long-term projects |
| | Emotional self-regulation is promoted through small-group work and cooperative learning experiences during free-choice |

# CHAPTER FOUR

# TOOLS OF THE MIND

In the same way Malaguzzi was inspired by Vygotsky's work, Elena Bodrova and Deborah Leong were inspired to create a curriculum based on a sociocultural perspective, which resulted in Tools of the Mind. Tools of the Mind is an innovative, research-based approach to early childhood education that promotes the development of cognitive functions and intentional self-regulated learning in a socially mediated environment. The foundation of Tools of the Mind rests in the belief that make-believe play is substantially responsible for creating a strong social environment that foster cognitive growth. Tools of the Mind is heavily rooted in Vygotskian theory and is the only early childhood curriculum model recognized by The United Nations Educational, Scientific and Cultural Organization (UNESCO), making it worthy of further examination.

Elena Bodrova and Deborah Leong co-created this curriculum in 1993 with the aim of mirroring Vygotsky's key principles with a strong focus on make-believe play. This curriculum is currently being implemented in a wide range of settings from large urban school districts to small rural Head Start programs, even encompassing several public, charter, and private school districts across the United States. Tools of the Mind is primarily used in preschool and kindergarten classrooms, as well as with special education students, dual language learners, and accelerated learners. Bodrova and Leong have a history of studying Vygotsky and writing together that spans several decades and predominantly focuses on play, self-regulation development, early literacy development, state standards, and early childhood assessment (Bodrova & Leong, 2007, p. vi). Currently, Elena Bodrova is a senior researcher at Mid-Continent Research for Education and Learning (McREL) in Denver, Colorado. Before her work

in the United States, Bodrova was as a senior researcher at the Russian Center for Educational Innovations and the Russian Institute for Preschool Education where she worked with students and colleagues of Vygotsky. Deborah Leong is a professor of psychology and the director of the Center for Improving Early Learning (CIEL) at Metropolitan State College of Denver.

## The Social and Cultural Context

The concept of "tools of the mind" comes from the Vygotskian belief that just as physical tools extend our physical abilities, mental "tools" extend our mental abilities, enabling us to solve problems and create solutions in an increasingly socialized world. When applied to children, this means that to successfully function in school and beyond children need to learn more than a set of facts and skills, "they need to master a set of mental tools" (Bodrova & Leong, 2007, p. 4).

In a Tools of the Mind classroom the social environment is critical in the successful acquisition of these mental tools. Through peer collaboration, children are able to form early social connections with their peers that will eventually foster into mature social relationships. Peer collaboration occurs when peers work in groups teaching and helping one another to construct meaning. During this process they not only gain a deeper mutual understanding of the material but they simultaneously build friendships and community (Copple & Bredekamp, 2009). This peer collaboration flows directly into the idea of play partners, which teach children important social skills such as how to behave as an academic peer and work cooperatively. Buddy reading is another extension of peer collaboration and is designed for children to simultaneously practice self-regulation and cognitive skills. In buddy reading, pairs of children "read" books to each other using external mediator cards to remind them of their roles as they take turns reading and listening.

## The Cognitive Component

The leading activity in a Tools of the Mind classroom is make-believe play, due to the significant acceleration of cognitive processes during the preschool and kindergarten years. Additionally, Tools of the Mind curriculum relies heavily on the use of play, as well as additional non-play activities, as the primary facilitators of social development in an effort to ensure the highest possible level of intellectual development during early childhood.

### Higher Mental Functions

The development of higher mental functions is essential to overall cognitive development and is a byproduct of make-believe play. Symbolic functions typically emerge by the end of kindergarten and conclude when children are able to use objects, actions, words, and people to stand for something else, therefore using words as "concepts" (Bodrova & Leong, 2007, p. 124). During early childhood children form complexes where the various attributes used to categorize objects are not differentiated from each other.

**Zone of proximal development.** The zone of proximal development (ZPD) is a monumental byproduct of make-believe play and is foundational to Vygotsky. The ZPD is defined as "the distance between the actual developmental level determined by individual problem solving and the level of development as determined through problem solving under guidance or in collaboration with more capable adults and/or peers" (Bodrova & Leong, 2007, p. 40). The two components of the ZPD are known simply as the lower level and the higher level. The lower level of the zone is known as *independent performance* and demonstrates what the child can achieve alone, where the higher level of the zone is known as *assisted performance* and is responsible for demonstrating the maximum understanding the child can obtain with guided assistance. The overall goal of this guided assistance is to help children become masters of their

own behavior and take their learning into their own hands. In addition to the creation of the ZPD, make-believe play develops the psychological processes required for a child to understand the roles and rules of that particular play scenario, including but not limited to deliberate memory, focused attention, symbolic function, and complex problem solving (Bodrova & Leong, 2007).

**Imagination.** Imagination is another necessary skills derived from exposure to the leading activity, which allows children to invent new ways of thinking. Once children gain the ability to use their imagination they are able to separate thought into two planes: real and imaginary. "On the imaginary plane, the rules can be changed and manipulated at will to explore possible outcomes" (Bodrova & Leong, 2007, p. 126). This type of imaginary thinking allows us to think outside the box and come up with new combinations of ideas and new solutions. During this same time, children should be developing their ability to think on an internal mental plane, meaning "their thinking is no longer dependent on physically manipulating objects" but rather using generalized nonverbal representation called "models" (Bodrova & Leong, 2007, p. 125).

**Integration of emotions and thinking.** Near the end of kindergarten, children are able to moderate their emotions by using the memory of past experiences when faced with new ones. The integration of emotions and thinking demonstrates a major developmental milestone. "This accomplishment explains why feelings of success and failure at school begin to influence kindergarteners' motivations and their willingness to risk failure in taking on new learning tasks" (Bodrova & Leong, 2007, p. 127). This merging of emotions and thinking creates strong opinions and more deep-rooted relationships.

**Separation of thought from actions.** Another significant influence play has on development is facilitating the separation of thought from actions and objects. In terms of Vygotskian thinking, when a child begins to act independently of what he perceives that child

has reached a new mental plane of development. Mature make-believe play requires that a child separate the meaning or idea of an object from the object itself, making a child's increase in substitution flexibility a major developmental milestone towards complete abstract thinking. Additionally, role-playing an imaginary situation requires children to carry both internal and external actions (Bodrova & Leong, 2007). This ability to use internal actions is the first step towards more abstract thought, similar to their transition towards acting on an internal mental plane.

**Motivation.** Play also impacts motivation by allowing children to plan their actions appropriately in accordance with their desired outcome. During play, children develop a system of goals ranging from immediate to long-term, requiring them to become aware of their own actions moving their behaviors from reactive to intentional. Play facilitates cognitive decentration ("de-centering"), which is characterized through the ability to take other people's perspectives (Bodrova & Leong, 2007, pp. 134-135). This is crucial for successful play as it allows children to coordinate multiples roles and negotiate scenarios with their play partners. The achievement of de-centering will eventually lead to the development of reflective thinking later in childhood.

**Games with rules.** Non-play activities are also essential in a Tools of the Mind classroom due to their cognitive benefits. Games with rules is a type of play-like interaction similar to that of make-believe play, where the players abide by explicit rules, but in this case the imaginary situation and roles are "hidden." Examples of these play-like scenarios are chess and soccer, where there are explicit rules and roles and imaginary situations arise (Bodrova & Leong, 2007, p. 137). Games with rules provide ZPD for the development of many unique skills, such as the ability to preserver in the face of temporary setbacks. This type of activity prepares children

to participate in didactic games, which are playful games with an academic focus and are often implemented in kindergarten and beyond. Children also learn through productive activities such as dramatization and block building, which are often used as a starting point for real play-acting with scripts. This type of play-acting teaches children about the underlying structure of stories, promotes literacy development with the use of new vocabulary, and provides opportunities to practice memory skills (Bodrova & Leong, 2007).

**Preacademic activities.** Preacademic activities are also necessary during early childhood but should be introduced with caution. These sorts of activities should emerge out of a child's interests and should only be present in the everyday social context of the child, such as pretend play, painting, or block building (Bodrova & Leong, 2007). It is important for teaching to be set up in a way that satisfies the child's needs and that goal of instruction should be to teach "written language and not writing the alphabet" (Bodrova & Leong, 2007, p. 139).

**Motor activities.** Lastly, motor or movement activities should also be worked into the classroom. Research suggests there is a "relationship between motor control and the later control of mental processes" (Bodrova & Leong, 2007, p. 139). Implementing activities that require children to get out of their seats and move is helpful in promoting self-regulation, as well as cognitive development.

**Self-Regulation**

In addition to the development of higher mental functions, make-believe play facilitates the development of self-regulation, which involves the regulation of both cognitive and social-emotional processes. In short, self-regulation can be explained as "the process of continuously monitoring progress towards a goal, checking outcomes, and redirecting unsuccessful efforts" (Berk, 2012, p. 449). In a double-randomized study conducted by the National Institute for Early

Education Research, Tools of the Mind was compared to a control group using a high-quality early childhood education program with no specific emphasis on self-regulation. Students who received the standard Tools of the Mind program, "were found to have higher rates of self-regulation, scored higher in classroom management measures, used classroom times more productively, and had a higher rate of appropriate and cognitively challenging interactions" (Barnett et al, 2008). Due to research similar to this, self-regulation is recognized as a strong determinant of academic success. In particular, make-believe play is a significant contributor to the development of self-regulation by creating imaginary situations and helping children learn how to plan scenarios that build and change as play progresses, while also following the rules (Copple & Bredekamp, 2009). In the beginning, self-regulation is applied to physical actions in play, then social behaviors, and extending all the way to mental processes that enable a higher level of play such as memory and attention. For children to be able to regulate their own actions, they first need to learn the rules and standards they need to use for the appropriate play situation (Bodrova & Leong, 2007).

**Play planning.** Play planning is considered an important facet of the development of self-regulation and occurs when either one child or a group of two or more children agree on the details of a play scenarios or on the use of play props prior to the beginning of play. During this process, children describe what they are going to do when they play and then represent their play plan on paper through drawing and/or writing (Nilsen, 2010, p). Play planning is most effective when teachers engage children in planning before play begins as well as during play, and then encouraging children to plan for the next day. Planning for the next day stimulates memory through the process of gathering materials and making notes as a reminder of where to take up the play scheme.

Tools of the Mind capitalizes on several of the most significant components of Vygotsky's sociocultural theory all of which are summarized in Table 2. Tools of the Mind primarily focuses on three Vygotskian hallmarks including make-believe play, the use of a zone of proximal development, and self-regulation. It is through the intentional use of such components that developmental successes can be attributed to this interpretation of Vygotskian theory.

Table 2

*Tools of the Mind in Terms of Vygotsky's Sociocultural Framework*

| Vygotsky's Framework | Tools of the Mind |
|---|---|
| Social Environment | Play promotes peer collaboration and cooperation |
| | Play partners and buddy reading |
| | Physical environment should promote written language |
| Adult Interactions | Scaffolding in the child's zone of proximal development |
| | Teacher-directed play planning |
| Peer Interactions | Peer collaboration through play partners and buddy reading |
| | Make-believe play |
| | Non-play activities and preacademic activities |
| Higher Mental Functions | Play-acting promotes literacy and opportunities to build memory |
| | Block building helps children learn to use a different set of symbols |
| | Symbolic function, imagination, and integration of emotions |
| Zone of Proximal Development | Promoted through make-believe play |
| | Games with rules provide a ZPD for skills such as resilience |
| Make-Believe Play | Leading activity in preschool and kindergarten |
| Self-Regulation | Motor activities require children to get out of their seats and move, promoting self-regulations |

# CHAPTER 5

# VYGOTSKY SPEAKS

If Vygotsky had lived through the period of curriculum creation and innovation, he would undoubtedly hold very strong opinions about current early childhood practices, particularly related to the two previously discussed curricula, Reggio Emilia and Tools of the Mind. Both models posit that Vygotsky's theory provides the foundational principles for their unique child/teacher-centered, play-based curriculum. Although his exact thoughts on Reggio Emilia and Tools of the Mind will remain unknown, to gain a potential understanding of his opinion each curriculum will be evaluated based on how it aligns with the two driving principles of his sociocultural theory: 1) the presence of a rich socially and culturally mediated environment, and 2) the successful development of cognitive components including higher mental functions and self-regulation. If a curriculum model aligns with Vygotsky's personal pedagogical beliefs, it is conceivable that he would be an advocate for that curriculum. Each of these curricula touches on the importance of placing children in socially rich environments with a focus on holistic development, but are these curricula meeting the Vygotskian standard? That is, how do these two approaches actualize Vygotsky's theory?

## The Social and Cultural Context

According to Vygotsky's sociocultural theory of development, the social context is largely influenced by Urie Bronfenbrenner's Ecological Systems model, which breaks down the social environment into five levels. This model solidifies the view that no two children are the same due in large part to their social environment. Bronfenbrenner's claims highlight a primary belief of Vygotsky, that a combination of daily social interactions and a rich physical environment are significant in terms of child development. To fully reflect this Vygotskian

standard, curriculum models must promote both adult and peer interactions in both academic and social settings, as well as provide a well-rounded physical environment that offer opportunities for independent exploration and cooperative learning. Furthermore, culture must play a role in mediating the environment, as Vygotsky believed humans were subject to both *phylogeny* (human history) and *ontogeny* (individual history).

Reggio Emilia values adults and peer interactions, as demonstrated through a consistently high level of community support and parental involvement. From the very beginning of Reggio Emilia parents have been revered as their child's primary teacher, responsible for collaborating and advocating for their child's best interests. Reggio was birthed during a culturally rich time in Italian history, as the natives were rebuilding their towns after the war and it is believed that their view of the world at this time was transmitted into a curriculum that treasured young lives as the future for the survival of the nation. Being aware of the past human history and individual history of each person, has since been engrained into their culture and is demonstrated through this curriculum program, a belief that is inherently Vygotskian. Additionally, the teacher becomes a co-learner with the students through the use of long-term projects. These small group projects are teacher-led but can be directed at the will of the student's interests. Furthermore, the child directly influences their own social environment during free choice when they independently explore their environment while also working cooperatively with one another.

Tools of the Mind emphasizes the use of make-believe play as the primary facilitator of social interactions. Make-believe play is the leading activity in every Tools of the Mind classroom followed by games and other nonplay activities, each with their own social and cognitive motivators. It is noted that through make-believe play children are interacting with their peers in a productive manner building friendships, in addition to community and cultural

ties. However, Tools of the Mind does not go as far as to describe the desired physical set-up of their classroom leaving the specific types of materials and available resources up for discussion. Given that this curriculum places so much emphasis on the importance of the social world, this is an area that needs additional attention and support.

Using a Vygotskian lens, Reggio Emilia aligns with Vygotsky's view of a socially and culturally mediated environment because of the overwhelming opportunities for social interaction and the strong physical make-up of the classroom, however Tools of the Mind is less explicitly aligned than Reggio Emilia in this aspect of Vygotsky's framework due to a lack of specific guidance in terms of materials and classroom layout.

**The Cognitive Component**

For Vygotsky, the goals of cognitive development included solidification of higher mental function and self-regulation. He believed that higher mental functions are deliberate, mediated, and internalized cognitive processes acquired through learning and teaching within the child's zone of proximal development (ZPD). While working in the ZPD, teachers are guiding children's learning with explanations, demonstrations, and verbal prompts through a Vygotskian technique known as assisted discovery. This guided assistance can be taken one step further to include peers through the encouragement of peer collaboration and make-believe play. It is believed that peer collaboration in any form is an ideal social context for the fostering of cognitive development. Additionally, for make-believe play to be most effective it must be characterized as mature play where children are able to create detailed scenarios and play for long durations of time. This type of mature play strengthens skills such as sustained attention, memory, logical reasoning, language and literacy, imagination, creativity, and self-reflection. In addition to the development of higher mental functions, the solidification of self-regulation is

equally important. The ability for a child to monitor their own progress when working towards and goal, as well as control their emotions and impulses is vital in their overall cognitive development.

The Reggio Emilia approach relies on the active exploration by the child, as they are encouraged to freely select and engage in activities based on their interests. This belief mirrors the overall goal of the curriculum, which is to make students feel useful and involved in everyday life. The Reggio curriculum states that the specific areas set up around the classroom including activities such as dramatic play, dress-up, puppetry, shadow play, and graphic arts are proven to significantly promote cognitive and linguistic development among all participants. The teacher is also held to a particularly high standard since they are responsible for documenting all student interactions in an effort to identify interests and curiosity, which will help them precisely plan activities for further growth. In addition, make-believe play is among the many options in a Reggio classroom but is not the leading activity. Because methods used in the Reggio approach include free-choice areas and highly involved teachers, children in these programs can and do demonstrate cognitive growth.

In contrast, Tools of the Mind classrooms directly target the student's zone of proximal development by providing specific scaffolding during make-believe play. It is the belief of Tools of the Mind that make-believe play creates the ZPD through the explicit use of problem solving under guidance or in collaboration with more capable adults. Make-believe play also aids in the development of our psychological processes such as deliberate memory, focused attention, symbolic function, and complex problem solving. It is through this leading activity that student's cognitive abilities are put to the test through the creation and following of a specific play scenario. Tools of the Mind directly states that make-believe play facilitates the development of

self-regulation beginning with the physical actions of play such as following the specific roles and rules of the play scenarios. This self-regulation then progresses to social and emotional impulse control and concludes with the mastering of mental process such as memory and attention. Play planning helps facilitates this process by requiring students agree on specific details and plan for future play. Moreover Tools of the Mind implements other activities such as games with rules, productive activities, preacademic activities, and motor activities, each of which are expected to further develop the child's ZPD, as well as build the foundation for later academic learning.

Using a Vygotskian lens it appears that Reggio Emilia implements cognitively rich projects that encourage the student to thinking critically and independently. Reggio Emilia also believes that through the child's independent exploration, cognitive growth is sure to ensue. Comparatively, Tools of the Mind places heavy attention on promoting the numerous cognitive benefits of make-believe play including increased memory, attention, and problem solving skills, as well as self-regulation. Each of these curricula approach cognitive development in very different, yet equally acceptable ways.

## Final Evaluation

Based on the writings of Vygotsky it seems as though he would have difficulty supporting any curriculum that did not explicitly promote holistic development, including both the social and cognitive components of early childhood. With that being said, Reggio Emilia appears to do a thorough job cultivating a strong social environment that is rich with interactions and experiences, as well as providing cognitively enhancing learning opportunities. In comparison, Tool of the Mind approaches the social context through the generous use of make-

believe play, along with additional nonplay activities, as the primary facilitators of social and cognitive development.

The specific strengths of each curriculum have become increasingly clear through this detailed analysis of their foundational components. What has also become apparent are the several challenges that arise during the transition from psychology to pedagogy when practices cross time, space, and culture. Although Loris Malaguzzi (Reggio Emilia) and Elena Bodrova (Tools of the Mind) studied with Vygotsky and his students, trademark Vygotskian principles are uniquely interpreted and applied resulting in two distinct curricula models. While these varied actualizations of Vygotskian theory may be positive in terms of curriculum and their interface with current best practice, they pose several questions about the intended pedagogical beliefs of Vygotsky. A more complete understanding of how Vygotsky might inform an early childhood classroom is certainly important. Because there are more children entering preschool than at any other point in our nation's history, empirical research to support theory building is vital to ensure that all children receive the best educational models that can possibly be created.

# REFERENCES

Barnett, W., Jung, K., Yarosz, D., Thomas, J., Hornbeck, A., Stechuk, R., & Burns, S. (2008). Educational effects of the Tools of the Mind curriculum: A randomized trial. *Early Childhood Research Quarterly, 23*, 299–313.

Bergen, D. (2002). The role of pretend play in children's cognitive development. *Early childhood research and practice*, *4*(1). Retrieved March 18, 2014, from http://ecrp.uiuc.edu/v4n1/bergen.html.

Berk, L. (2012). *Infants and children: Prenatal through middle childhood.* Boston: Allyn & Bacon.

Biber, B. (1984). *Early education and psychological development.* New Haven, CT: Yale University Press.

Bodrova, E., & Leong, D. J. (2007). *Tools of the mind: the Vygotskian approach to early childhood education* (2nd ed.). Upper Saddle River, N.J.: Pearson/Merrill Prentice Hall.

Bredekamp, S. (2014). *Effective practices in early childhood education: Building a foundation* (2nd ed.). Boston: Pearson.

Bronfenbrenner, U. (1994) Ecological models of human development. In *International Encyclopedia of Education, Vol. 3, 2nd Ed.* Oxford: Elsevier. Reprinted in: Gauvain, M. & Cold, M. (Eds.). *Readings on the development of children, 2nd Ed.* (1993, p, 37-43). NY: Freeman.

Brunson, C. (2001). Loris Malaguzzi - Founder of The Reggio Emilia Approach. *Early Childhood Today*. Retrieved December 5, 2014, from http://www.scholastic.com/teachers/article/pioneers-our-field-loris-malaguzzi-founder-reggio-emilia-approach

Cadwell, L. (1997). *Bringing Reggio Emilia home: An innovative approach to early childhood education.* New York: Teachers College Press.

Copple, C., & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (3rd ed.). Washington, D.C.: National Association for the Education of Young Children.

Dodge, D., Colker, L., & Heroman, C. (2002). *The creative curriculum for preschool* (4th ed.). Washington, DC: Teaching Strategies.

Gandini, L. (1993). Fundamentals of the Reggio Emilia approach to early childhood education. *Young Children, 49*(1), 4-8.

Hendrick, J. (1997). *First steps toward teaching the Reggio way*. Upper Saddle River, N.J.: Merrill.

Hesse-Biber, B., & Nagy, S (2011). *Handbook of emergent methods.* New York, NY: Guilford Publications.

HighScope: Research-based early childhood curriculum, assessment, training, and publishing. (n.d.). Retrieved September 1, 2014, from http://www.highscope.org

Montessori, M. (1909). *The Montessori method*. New York, NY: Schocken Books.

NAEYC & NAECS/SDE (National Association of Early Childhood Specialists in State Departments of Education). 2003. *Early childhood curriculum, assessment, and program evaluation: Building an effective, accountable system in programs for children birth through age 8. Position statement*. Joint position statement with expanded resources. Washington, DC: NAEYC.

New, R. (2007). Reggio Emilia as cultural activity theory in practice. *Theory Into Practice, 46*(1), 5-13.

Newson, J., & Newson, E. (1975). Intersubjectivity and the transmission of culture: On the social origins of symbolic functioning. *Bulletin of the British Psychological Society, 28,* 437-446.

Newsweek (1991, Dec. 2). *The 10 Best Schools in the World, and what we can learn from them*. 51-64.

Nilsen, B. (2010). *Week by week: plans for documenting children's development* (5th ed.). Belmont, CA: Wadsworth.

Schweinhart, L. J., Montie, J., Xiang, Z., Barnett, W. S., Belfield, C. R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry preschool study through age 40.* Ypsilanti, MI: High/Scope Press.

Vygotsky, L. S., & Kozulin, A. (1986). *Thought and language* (Translation newly rev. and ed.). Cambridge, Mass.: MIT Press.

Waldorf Early Childhood Association of North America. (2015). Retrieved May 24, 2014, from http://www.waldorfearlychildhood.org

Wertsch, J. V. (1985). *Vygotsky and the social formation of mind*. Cambridge, Mass.: Harvard University Press.

Wink, J., & Putney, L. G. (2002). *A vision of Vygotsky*. Boston: Allyn and Bacon.