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EXPERIENCES OF EARLY CHILDHOOD EDUCATORS WHO USE CONSTRUCTIVIST APPROACHES IN AN ERA OF HIGH-STAKES ACCOUNTABILITY

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EXPERIENCES OF EARLY CHILDHOOD EDUCATORS WHO USE CONSTRUCTIVIST APPROACHES IN AN ERA OF HIGH-STAKES ACCOUNTABILITY

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF INSTRUCTIONAL LEADERSHIP AND ACADEMIC CURRICULUM

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This dissertation is dedicated to my husband, Joe, for putting up with me over the past 22 years. I am grateful that you are the paterfamilias of this family. Thank you for your continued love and support. I could not have done this without you. I promise this will be my last degree. I would also like to dedicate this to my mom, Bobi Stretch. You've always been there for me. In the words of the immortal Patsy Cline, "I would never have gone anywhere if it hadn't been for Mother's faith and support." Finally, I dedicate this to my two children, Alden and Sylvia. Out of all of my achievements, being your mom beats them all.

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Abstract

Over the past thirty years, American education has moved toward a system of increased accountability. High-stakes accountability is characterized by the reliance of high-stakes testing, or assessments that lead to significant decisions for the child, teacher, or school. Several negative effects of high-stakes accountability have arisen, including effects on the content and instructional practices. While the current educational system has pressured many early childhood educators to use more didactic, traditional practices, some teachers have continued to use instructional practices that align with their constructivist philosophy, or constructivist approaches. This hermeneutic phenomenological study examined the experiences of seven early childhood educators who use constructivist approaches during the era of high-stakes accountability. The study was based on the conceptual framework of Piagetian constructivism: Learners construct knowledge through interactions with their environment, both the physical environment and individual's social interactions with others. Data was collected in the form of individual interviews, observations, a group interview, document review, and field notes. Data analysis included looking for patterns and themes within cases and between the cases. Three major themes emerged from analysis: 1) trust, 2) academic pushdown, and 3) teacher resistance. Implications for practice include conversations between teachers and administrators to build shared understanding and trust, professional development on how to advocate, and increased mentoring to provide in-service teachers with networks of support.

Keywords: constructivism, constructivist approaches, high-stakes accountability, teacher trust, academic pushdown, teacher resistance, autonomy, advocacy

Chapter 1: Introduction

In the last thirty years, there has been a movement toward increased accountability in the American educational system, as evidenced by the 1983 *A Nation At Risk* report (National Commission on Excellence in Education, 1983), No Child Left Behind Act of 2001 (No Child Left Behind, 2002), and implementation of the Common Core State Standards (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010a). While many early childhood teachers have felt pressured to use more didactic, teacher-directed practices to meet the expectations from high-stakes accountability, some have continued to use teaching practices consistent with Jean Piaget's theory of constructivism. This study used the conceptual framework of constructivism to better understand the experiences of seven early childhood educators who implement teaching practices that align with the theories of Piaget, or constructivist approaches.

Research Problem

Current educational policy in the United States has created an era of high-stakes accountability. High-stakes accountability can be defined as the reliance on external mechanisms, such as standards, curriculum, and assessments, to create changes that make educators, schools, and districts responsible for student performance (Diamond & Spillane, 2004). Furthermore, high-stakes accountability is characterized by the implementation of high-stakes tests. Tests are considered high-stakes when the results are used to make significant educational decisions for students, teachers, schools, and districts (Amrein & Berliner, 2002; Amrein-Beardsley, Berliner, & Rideau, 2010; National Research Council, 2008). Examples of consequential decisions that might

come from high-stakes assessments include those related to admissions, graduation, grade promotion or retention, teacher reassignment, job loss, bonuses, funding, accreditation, and school takeover. These decisions have filtered down to the early childhood level evidenced by some states creating laws requiring the retention of children who do not pass a third grade reading test (Rose & Schimke, 2012).

As additional mandates, with even bigger consequences, have been implemented over time, early childhood educators have reacted in a variety of ways. Some educators have made changes to the content by narrowing the curriculum to focus heavily on tested subjects, including language arts and mathematics (Berliner, 2011; McMurrer, 2008; Nichols & Berliner, 2008). Others have spent a great deal of time teaching to the test (Guilfoyle, 2006; Koretz, 2005). The term *teaching to the test* is common in American education and occurs when the curriculum heavily focuses on preparing students for standardized tests. Not only does this narrow the curriculum to tested subjects even further, it requires teachers to teach the material in a superficial manner and concentrate on low-level knowledge in order to cover all of the required content.

Other early childhood educators have engaged in unfavorable instructional practices including moving away from play-based, child-centered approaches toward skill-driven, teacher-directed methods (Berryhill, Linney, & Fromewick, 2009; Vogler & Virtue, 2007). This movement from child-centered approaches toward the use of teacher-directed methods conflicts with the 2009 position statement on developmentally appropriate practices adopted by the National Association of the Education of Young Children, the leading early childhood education professional organization. Au (2007) conducted a qualitative metasynthesis of 49 studies that looked at how high-stakes

testing affects curriculum. He found a primary effect of high-stakes testing was an increase in teacher-centered pedagogies. More specifically, educators turned to teacher-centered instruction because of the pressure they felt to cover the breadth of information in both content and testing procedure. Au's synthesis also revealed teacher-centered practices often occurred with children's knowledge fragmentation and the narrowing of the curriculum. Jones (2007) determined teachers who were pressured by high-stakes accountability were likely to use activities that were rote, discrete, and focused on drill and skill practice.

There are, however, some educators who have refused to conform to the movement toward skill-based, teacher-directed methods. They have resisted the mandates that have been pushed down. These teachers continued to facilitate student learning using meaningful content and child-centered instructional practices. Some used practices that reflect a philosophy based on constructivist theory as an alternative to teaching practices based on transmission models. Teachers who hold philosophies consistent with constructivist theory believe knowledge cannot be transmitted to students; rather, children are actively engaged in constructing their own knowledge (Alsup, 2004). This active construction of knowledge contradicts those approaches in which learning is defined by a passive acquisition of knowledge, such as the transmission model.

Quinn and Ethridge (2006) studied teachers at the early childhood, elementary, and middle school levels who worked at a charter school that implemented constructivist approaches aligning with the theories of Piaget. Charter schools in the state where the research took place were defined as "tuition-free public schools created

through an agreement or 'charter' between the school and the local school board or a state university."(Florida Department of Education, 2003, par. 1). Charter schools were held to the same levels of accountability as public schools, in the form of a state-wide grading system. Quinn and Ethridge found even when pressured by statewide educational mandates for high-stakes testing and accountability, teachers in this school held firm to their pedagogical beliefs and used instructional practices in the best interest of the children.

The fact that the teachers in the Quinn and Ethridge (2006) study used constructivist approaches in the era of high-stakes accountability likely stemmed from the high level of support from parents and administration. The idea for the school was conceived by a group of parents, teachers, and an administrator to replicate the constructivist program offered by the Bank Street College's Laboratory School of New York. It was through their hard work that the school even existed. Teachers in the study felt "valued and trusted" by the principal (p. 120). They had the autonomy to make decisions that were within the boundaries of the school based on the philosophy of doing what is best for the children.

The strong level of support from administrators, parents, or other teachers and autonomy to teach using constructivist approaches that Quinn and Ethridge (2006) found are not necessarily observed in other early childhood classrooms. The overarching questions become what are the experiences of teachers who do not have the same level of support, such as those in public schools? How do these educators resist the pressure to conform to teacher-directed practices that are often expected in this era of high-stakes accountability? There is a need for more research to answer the

aforementioned questions and further explore the implementation of instructional approaches that align with constructivist theory in the current educational system.

Research Purpose

The purpose of this research was to examine the experiences of early childhood educators with philosophies that align with constructivist theory who teach in an era of high-stakes accountability. As the current educational environment can limit public school teachers' autonomy to implement practices that research has shown to be best for young children (Miller & Almon, 2009; NAEYC, 2009; Thompson, 2004), it is critical to hear the voices of early childhood educators who have refused to conform by implementing constructivist approaches. This type of examination can best be accomplished through a qualitative methodology in order to understand what it means to be an early childhood educator in today's world. As a researcher using a hermeneutic phenomenological approach, my aim was to share these educators' lived experiences because the essence of these experiences is not always readily apparent (van Manen, 1990).

Research Questions

This study was guided by the following primary question: What does it mean to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability? The sub-questions were as follows:

1) What experiences have these teachers had regarding their teaching practices from parents, colleagues, administrators, and others?
2) What factors have impacted these educators' teaching practices?
3) How have these teachers' instructional decisions been affected by policy

initiatives at the school level, district level, and government level?

Conceptual Framework

The conceptual framework for this study was based on the theory of constructivism. At its most basic level, constructivism is a theory that explains the nature of knowledge. Branscombe et al. (2014) described constructivism as "a theory of knowing that emphasizes the role each person plays in constructing his or her own knowledge rather than absorbing directly from the environment" (p. 10). Rather than being acquired from an external source, knowledge is internally constructed by individuals making meaning from their interactions with the environments (Kamii & DeVries, 1980). Constructivist theory is based on the assumption that knowledge is "tentative, subjective, and personal" to the individual (Airasian & Walsh, 1997, p. 445). That is, individuals construct their own subjective representations of an objective reality. Rather than being a set of absolute, universal truths, knowledge is considered to be a set of "working hypotheses" that is temporary and ever-changing (p. 445). As learners are confronted with new experiences, they continually organize and adapt in order to make sense of the world around them (Gadanidis, 1994). Constructivism conflicts with the idea of *tabula rasa*, or blank slate, as learners bring past experiences and knowledge to a situation, linking new information to prior knowledge.

There are several theorists who have been associated with constructivist theory, including John Dewey, Jerome Bruner, and Lev Vygotsky. This study focused specifically on the constructivist theory of Jean Piaget (1967/1971; 1969; 1977; Piaget & Inhelder, 1969). Piaget has had a significant influence on teaching practices in early childhood education, as he was one of the first researchers to study how children knew

what they knew (Mooney, 2000). He believed children construct their own knowledge through meaningful, hands-on interactions with the environment (Piaget & Inhelder, 1969). Knowledge is constructed from the unity of both the subject and the object. Humans, like other living organisms, are constantly adapting to their environment. According to Piaget, learning is cognitive adaptation and occurs through the restructuring of schemas, or mental frameworks an individual uses to organize and understand the world. Individuals create understanding and meaning about the world by constantly comparing their new experiences to their prior knowledge.

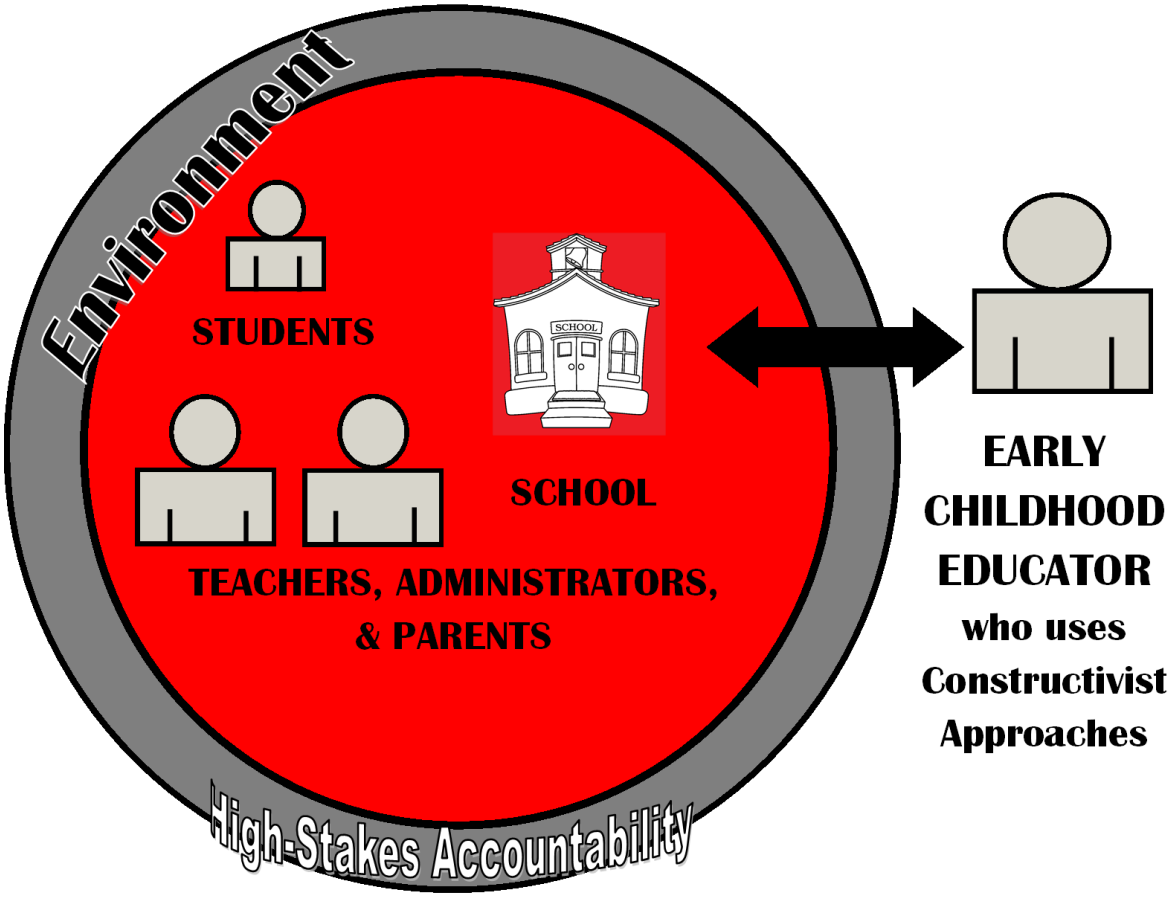
A common myth about Piaget's constructivist theory was that he neglected the importance of social interactions in children's development and learning (Broughton, 1981; Forman, 1992; Phillips, 1995). However, Piaget himself wrote about the importance of these factors: "The individual would not come to organize his operations in a coherent whole if he did not engage in thought exchanges and cooperation with others" (Piaget, 1947/1966, p. 174). He believed that a "social life is a necessary condition for the development of logic" (Piaget, 1928/1995, p. 210). In fact, throughout his research, Piaget stressed the importance of social factors on the development of knowledge. Examples of this can be found in his writing about the transition from egocentric to socialized thinking (Piaget 1923/1951, 1932/1962), achievement of conservation and reversibility (Piaget, 1950/1973), and moral development of children (Piaget, 1932/1962). Although he did not believe social interactions were sufficient for cognitive development, as individuals must construct their own knowledge and not simply acquire it from outside sources, Piaget believed they were necessary (Piaget & Inhelder, 1969).

It is important to note that constructivism describes a theory about learning, not an instructional approach (Airasian & Walsh, 1997; Yilmaz, 2008). In fact, Clements (1997) noted "constructivism tells us more about learning than teaching" (p. 198). Researchers in the field of early childhood education typically describe the instructional practices of educators who have a philosophy based on the theories of Piaget using the terms *constructivist teaching practices*, *constructivist curriculum*, or *constructivist approaches* (Branscombe et al., 2014; Brooks & Brooks, 1999; DeVries, Zan, Hildebrandt, Edmiaston, & Sales, 2002; Kamii & DeVries, 1993). To be consistent with the works of other researchers in the field, this study will use the term constructivist approaches to describe classroom practices implemented by educators who have a philosophy based on Piaget's constructivist theory.

The present study aligned with the conceptual framework of constructivism: Knowledge is internally constructed by learners making meaning from their interactions with the environment. The environment includes both the physical environment and individual's social interactions with others. Figure 1 presents a visual summary of how the study fits with the conceptual framework of constructivism. This study investigated early childhood educators who use constructivist approaches. The teacher constructs knowledge about what it means to be an early childhood educator through his or her interactions with the environment, indicated by the double sided arrow. The environment includes both the physical environment, such as the school, and social interactions with the students, teachers, administrators, and parents. The part of the environment that is the focus of the present study is high-stakes accountability. This is represented in the diagram as a circle surrounding the environment because of its

pervasive influence on the rest of the physical environment and social interactions.

Figure 1: Conceptual Framework



One of the key functions of a conceptual framework is to inform the design of the study (Maxwell, 2013). It is a way to logically link the components of research. The aforementioned conceptual framework directly aligned with my research question and sub-questions, as the purpose of my research was to understand what it means to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability. The literature focused on three major areas: high-stakes accountability, constructivist theory and instructional approaches, and potential conflicts between high-stakes accountability and constructivism. Each of these areas corresponded with the

conceptual framework

The conceptual framework also informed the methodology in this research. Hermeneutic phenomenology coordinates with constructivism because I co-constructed the essence of what it means to be an early childhood educator in an era of high-stakes accountability with the participants. The methods for collecting the data were also congruent with the conceptual framework. Mills, Bonner, and Francis (2006) explained that an interview is considered to be a means of knowledge construction between the researcher and the interviewee. The semi-structured individual interviews and group interview were tools that allowed me to co-create understandings about the phenomenon at hand. The conceptual framework, including the six specific instructional practices described by Branscombe et al. (2014), was used to create starter codes to analyze the data.

A criterion for participation in the study was that the early childhood educators use constructivist approaches, specifically those practices that align with Piaget's constructivist theory as described by Branscombe et al. (2014). My own interactions with the participants also fit with the conceptual framework. At the start of the data collection process, I made it clear to the participants I was engaged the research because I did not have the answers and I hoped to learn from the experiences of those in the field. I shared my questions and inquired about the participants' questions and resolutions to the phenomenon. To foster reciprocity, I presented participants with emerging conceptual ideas and asked for their feedback. In some cases, my interpretations or insights resonated with them. In others, participants helped to clarify and refine to better capture their perspectives. This methodology, including these types

of interactions, made it clear the study was a co-construction of the reality of the phenomenon.

Organization of the Study

This dissertation has been divided into five chapters. The first chapter focuses on introducing the research problem, purpose, and significance. While high-stakes accountability has influenced several early childhood educators to toward skill-based, teacher-directed methods, some educators have continued to implement meaningful, child-centered approaches. This lead to the questions: What are the experiences of teachers who do not have the same level of support, such as those in public schools? How do these educators resist the pressure to conform to teacher-directed practices that are often expected in this era of high-stakes accountability? The purpose of this research was to explore the experiences of early childhood educators with philosophies that align with constructivism who teach in an era of high-stakes accountability. The overarching research question guiding the study was: What does it mean to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability? The study was significant because it documented the experiences of educators who have resisted the pressure to engage in ineffective teaching practices as defined by early childhood professional standards.

Chapter two looks at the literature related to the study. A detailed description of high-stakes accountability, including a definition and history, is given first. This is followed by the effects high-stakes accountability can have on the classroom, including content and instructional practices. A description of constructivist theory further explains the conceptual framework. This narrative includes key characteristics of

constructivism as well as a description of the continuum of teaching practices aligning with constructivist theory. The literature review concludes with an explanation of potential conflicts between high-stakes accountability and constructivist approaches.

The third chapter describes the methodology. The research design of this qualitative study was a hermeneutic phenomenology from an interpretivist paradigm (van Manen, 1990). Such a design allowed me to co-construct understanding about what it means to be an early childhood educators who use constructivist approaches in an era of high-stakes accountability. The early childhood teachers who participated in this study fit two major criteria: 1) teach in a public school at the early childhood level and 2) use teaching practices consistent with constructivist theory as described by Branscombe et al. (2014) plus autonomy and the valuation of misconceptions and errors. Seven participants were selected through purposeful sampling using snowball recruitment (Lincoln & Guba, 1985). Two taught kindergarten, four taught first grade, and one taught second grade.

Data was collected from multiple sources including individual interviews, observations, a group interview, document review, and field notes. Starter codes based on the literature were initially used to code the data. Analysis took place both during and after the data collection period in the form of thematic analysis, within-case analysis, and cross-case analysis. There was a continual iteration between the parts (data) and the whole (evolving understanding of the phenomenon), or hermeneutic circle (Laverty, 2003), to gain a better understanding of the phenomenon.

Chapter four describes the major findings of the study. These findings were organized into three major themes that emerged from data analysis: 1) trust, 2)

academic pushdown, and 3) teacher resistance. Each of the three themes also had several subthemes. The findings included the voices of the participants to give first-person accounts of their lived experiences. This is consistent with the research design of hermeneutic phenomenology, as the focus is on individual's lived experiences (van Manen, 1990).

The last chapter discusses the major findings in context of the larger body of literature. Embedded in the discussion are implications for teachers, teacher educators, and early childhood education organizations. This is followed by limitations and recommendations for further research based on the findings.

Significance of the Study

Researchers have studied the impact high-stakes accountability and testing have on instructional practices. However, many of these studies have focused on how high-stakes accountability has impacted specific areas of the curriculum including literacy (Assaf, 2006; White, Sturtevant, & Dunlap, 2002), mathematics (Lloyd, 2007; Vogler & Burton, 2010), science (Settlage & Meadows, 2002; Upadhyay, 2009), and social studies (Au, 2009; Fitchett & Heafner, 2010; Vogler & Virtue, 2007). Other studies have focused on specific aspects of constructivist approaches, such as autonomy (Beasley, 1996; Brown, 1995; Eaton, 2003; Ethridge, 1998; Montgomery, 2011). Fewer have focused on the overall experiences of teachers, specifically early childhood educators in public schools.

Quinn and Ethridge (2006) included early childhood teachers in their study of educators who implemented constructivist approaches even when pressured by high-stakes accountability. Although the charter school in the study was held accountable to

the same standards as public schools in the state, it was envisioned and created by teachers, parents, and an administrator who held a constructivist philosophy. This compatibility in philosophy and investment from all stakeholders does not typically occur in public schools. Thompson (2004) focused her research on early childhood educators in public schools. However, she only included those who taught kindergarten. Finding studies whose participants included early childhood educators who used constructivist approaches in a range of grades during an era of high-stakes accountability has proved to be challenging.

The present study is significant because it documents the experiences of educators who teach kindergarten to grade two and have resisted the pressure to engage in ineffective teaching practices. This is especially important considering the influence high-stakes accountability can have on pedagogy (Au, 2007). Preparing more teachers to stand against ineffective instructional practices while under the pressure from administrators, parents, the community, and other teachers requires a clear understanding of the factors that encourage or inhibit their perseverance. Results from this study may be used by early childhood educators to be more reflective about their own instructional practices. It may also encourage some to be more autonomous and make the choice to align their teaching practices with constructivist theory, even when pressured to do otherwise from multiple outside sources.

This study may also have implications for early childhood teacher educators. In recent years, colleges of education have attempted to prepare pre-service teachers, not only with theory, but also with the strategies to address increasing demands and expectations from high-stakes accountability (Buldu, 2003). After reading this study,

teacher educators could realize strategies current early childhood educators use to resist the pressure from high-stakes accountability and share them with pre-service teachers. Overall, the present research will help those in the fields of early childhood education and teacher education better understand how high-stakes accountability is affecting early childhood education.

Definition of Terms

Academic pushdown: A term describing when the expectations and curriculum for older students are transferred to younger students (Katz, 1999). This term is synonymous with *pushed-down curriculum*.

Advocacy: The process of creating change by "standing up for children and their needs" (Goffin & Lombardi, 1988, p. 1).

Autonomy: The ability to think for oneself independent of reward and punishment (Kamii, 1984). The antonym of autonomy is *heteronomy*.

Constructivism: A theory of knowledge that argues humans generate, or construct, their knowledge from the inside through experiences with their environment

Constructivist approaches: A general term for the teaching practices that align with the constructivist theory based on the works of Jean Piaget.

Constructivist teaching practices: A description of classroom practices implemented by educators who have a teaching philosophy based on Piagetian theory. Under this philosophy, children learn as they 1) engage in self-selected, authentic tasks, 2) act on objects and interact with others, 3) are interested and intrigued about a phenomenon, 4) refine and coordinate old ways of thinking, 5) represent what they know to others, and 6) engage with other people (Branscombe et al., 2014). Two other

key elements, autonomy and the value of misconceptions and errors as learning opportunities, are also essential to constructivist teaching practices. This term is synonymous with the term *teaching practices consistent with constructivist theory.*

Early childhood educator: Although early childhood education covers children from birth through age eight, in this research early childhood educators refer to those who work in kindergarten to third grade in a public school setting. The term is synonymous with the term *early childhood teacher*.

Era of high-stakes accountability: A description for the current era of educational reform characterized by top-down policies and mandates for high-stakes testing.

High-stakes accountability: The reliance on external mechanisms, such as standards, curriculum, and assessments, to create changes that make educators, schools, and districts responsible for student performance (Diamond & Spillane, 2004).

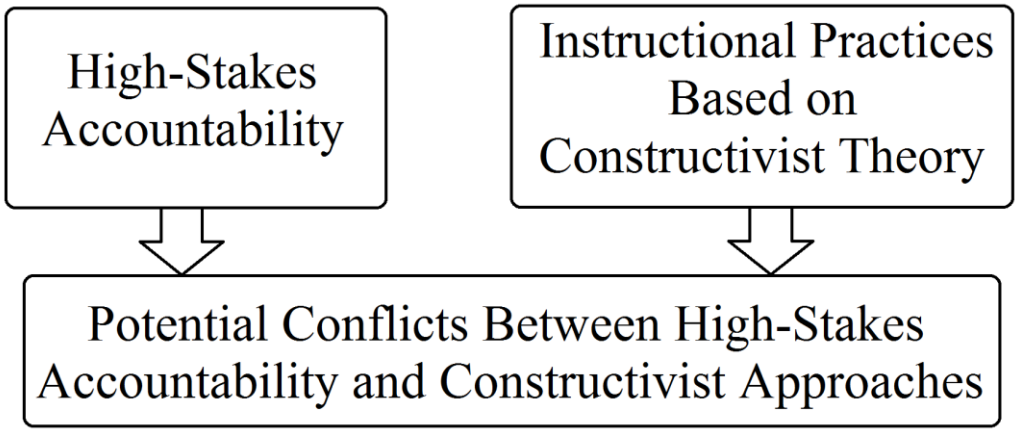
High-stakes testing: Assessments whose results are used to make significant educational decisions for students, teachers, schools, and districts.

Trust: "The belief that those on whom we depend will meet our expectations of them" (Shaw, 1997, p. 21). Essential components of trust include vulnerability, benevolence, reliability, competency, honesty, and openness (Hoy, 2012).

Chapter 2: Literature Review

The purpose of this literature review is to provide a comprehensive background to better understand the experiences of the early childhood educators who use constructivist approaches in an era of high-stakes accountability. It has been divided into three main sections: high-stakes accountability, instructional practices based on the theories of constructivism, and potential conflicts between high-stakes accountability and constructivism (Figure 2).

Figure 2: Overview of the Literature



The first section will include a definition and description of high-stakes accountability. A discourse on *A Nation at Risk* (National Commission on Excellence in Education, 1983), the No Child Left Behind Act of 2001, and the Common Core State Standards will illustrate why American education has become so influenced by high stakes accountability. In addition, the section will include a discussion about the negative effects of high-stakes accountability on education, including both content and instruction.

The second section will focus on the instructional practices consistent with Piaget's theories of constructivism. This will include an explanation about the

continuum of instructional practices and the differences between constructivist and traditional approaches. The six instructional practices in constructivist approaches (Branscombe et al., 2014) will help to define what is observed in classrooms of teachers who used constructivist approaches. A sub-section will focus on two concepts that are essential to instructional practices based on constructivism, autonomy and the value of misconceptions and errors as learning opportunities. A description of research studies that have demonstrated the benefits of constructivist approaches will be followed by criticisms to constructivist approaches and counter arguments to these criticisms.

The third section describes ways in which high-stakes accountability is inconsistent with constructivist approaches. There is a discussion on the pressure that is put on teachers, including examples from the research. The difficulty that some teachers have adhering to a constructivist philosophy during the era of accountability is explained. This section will conclude with questions about teachers who do implement constructivist approaches that will lead into the methodology.

High-Stakes Accountability

Accountability can be defined as the adherence to the rules and regulations of a system (Anderson, 2005). In educational systems, accountability policies have been created with the premise that children can and will achieve the goals of schooling. There is a reliance on external mechanisms, such as standards, curriculum, and assessments, to transform instructional practices (Diamond & Spillane, 2004). Proponents of accountability policies believe that by connecting the standards, curriculum, and assessments, there will be improvements in student learning and

increases achievement. With this logic in mind, policies have been implemented to improve outcomes by focusing on what and how educators teach (Diamond, 2012).

When accountability is considered high-stakes, the aforementioned external mechanisms, especially the assessments, are used to hold teachers, schools, and districts more responsible for student performance (Diamond & Spillane, 2004). High-stakes accountability is characterized by the heavy reliance on standardized assessments. It is based on the belief that high standards for education can be measured by standardized tests. The scores from these tests have been used to determine the worth of students, teachers, schools, districts, and overall educational system (Thompson, 2004).

Not all standardized tests are high-stakes. Tests are considered to be high-stakes when the results are used to make significant educational decisions (Amrein-Beardsley et al., 2010; National Research Council, 2008). High-stakes decisions include consequences for students, educators, and schools (Amrein & Berliner, 2002; Linn, 2008). Decisions that might affect students are related to admissions, graduation, or grade promotion while those affecting educators include teacher reassignment, job loss, and monetary rewards and sanctions. Increases or decreases in funding, financial supplements and sanctions, accreditation, or even school takeover are examples of the high-stakes consequences that can affect schools and districts.

Policymakers have historically attempted to use high-stakes testing to create large-scale changes in education (Elmore, 2003; Linn 2008). One major concern is many people have used assessments for purposes other than what they were designed. The purpose of the assessment should drive the decision making when determining the type of assessment to will be used (National Research Council, 2008). Significant

problems can occur when either the purpose is not considered or when an assessment intended for one purpose is inappropriately used for another. Shepard, Kagan, and Wurtz (1998) identified four categories of purposes for assessment: 1) assessment to support learning, 2) assessment for identification of special needs, 3) assessment for program evaluation, and 4) assessment for accountability. While there is a natural tendency to believe standardized tests is able to assess both student learning and accountability, using assessments for unintended purposes can create "very serious practical, scientific, and conceptual challenges" (National Early Childhood Accountability Task Force, 2007). This situation may create unrealistic expectations and lead to harmful consequences for children, teachers, and programs.

Another serious concern is when a single standardized assessment is used by teachers, administrators, or policymakers to make high-stakes decisions. Several researchers and professional organizations have cautioned against using assessments in this way. The American Educational Research Association (2000) believed consequential decisions should be made using multiple forms of relevant information, with assessment scores being only one of many factors. This position statement was made in conjunction with two other respected professional organizations, the American Psychological Association and the National Council on Measurement in Education. Other professional organizations including the National Council of Teachers of Mathematics (2012) and the International Reading Association (1999) agreed it is inappropriate to use the scores from one test to make consequential decisions for students. Even parent groups have advocated for using multiple measures for making potentially life-changing decisions. For example, in their position statement on

assessment and testing, the national Parent Teacher Association (n.d.) recognized a single test score should not determine a child's future. Unfortunately, many of these warnings against using a single test to make decisions of consequences have gone unheeded.

A History of High-Stakes Accountability

Accountability has become an essential and accepted part of modern American educational reform (Augustine & Freeman, 2011; Berliner, 2006; Elmore, 2003; Evans, 2012; Fuhrman, 2003; Mathis, 2010). McDonnell (2008) described four factors that have given high-stakes accountability such control: 1) Testing is pervasive and widely accepted in modern society; 2) Standardized testing is already widespread in education; 3) Testing is perceived to be low-cost and effective; 4) Testing allowed policy makers to specify expected outcomes while giving educators the opportunity to decide how to achieve them. Three major historical events that led to the current era of high-stakes accountability were the release of *A Nation at Risk* (National Commission on Excellence in Education, 1983), the No Child Left Behind Act of 2011 (No Child Left Behind, 2002), and the release of the Common Core State Standards (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010a). Figure 3 presents a timeline of these events that greatly influenced accountability in public schools.

Figure 3: Timeline of Events that Influenced Accountability



A Nation at Risk. The current obsession with high-stakes accountability began with the 1983 publication of *A Nation at Risk* by the National Commission on Excellence in Education (Barksdale-Ladd & Thomas, 2000; Lefkowits & Miller, 2006). The commission was created because of concerns about the public perception of the American education system (National Commission on Excellence in Education, 1983). Policymakers believed America to be inferior to other first world countries because of what the commission described as "the mediocre educational performance that exists today" (par. 2). The commission gave several examples of the supposed inferiority including the fact that a number of Americans were functionally illiterate, scores on achievement tests were decreasing, the amount of remedial math courses required at the college level were increasing, and high school seniors lacked higher order intellectual skills. In response to these concerns, the commission demanded that American education be made more challenging and rigorous. They suggested not only setting higher standards but also increasing testing to provide the public more information about student progress. Terms such as *back to the basics* became slogans for this reform movement. In a mere 36 pages, the accountability movement was born (Johnson & Johnson, 2002).

Before *A Nation at Risk*, accountability in education was considered a local matter, as school boards determined standards and curriculum for their system (Fuhrman, 2003; Vogler & Burton, 2010). After the report was published, hundreds of thousands of dollars were spent by states to develop unique sets of standards, curriculum, and corresponding assessments to ensure the students were meeting the standards (Barksdale-Ladd & Thomas, 2000). Many policy makers had a linear

progression of thought: When high standards are developed and curriculum is aligned to the standards, assessments that measure whether the students are meeting the standards will give an accurate indicator of student learning (Brooks & Brooks, 1999). They extended this logic to conclude the assessments could not only be used to measure how effectively students were learning but also how effectively teachers were teaching. This led to an accountability system for the students, teachers, and schools.

Many schools responded to *A Nation at Risk* and the back to the basics movement by mandating rigid, age-inappropriate curriculum for young children (Schwartz, 1997). Child-centered, hands-on learning was often replaced by skill driven, teacher-centered practices. The focus was on creating classrooms with academic rigor. Children were forced to engage in mindless, repetitious seatwork (Bredekamp, 1987). There were reports of increasing emphasis on developmentally inappropriate instruction in the form of workbooks, worksheets, and skill and drill practice activities (Bredekamp & Shepard, 1989; Charlesworth, 1989; Elkind, 1986; Hatch & Freeman, 1988; Hitz & Wright, 1988). *A Nation at Risk* and the back to the basics movement that followed had essentially changed kindergarten from "a child's garden to an academic boot camp" (Shepard, 1990, p. 159).

No Child Left Behind. The No Child Left Behind Act of 2001 (NCLB) extended the push toward high-stakes accountability by mandating annual testing of reading, math, and science for all children in grades three through eight and in grade ten (No Child Left Behind, 2002). NCLB amended the Elementary and Secondary Act of 1965 and provided federal financial support to school districts serving children from low income families (Linn, 2008). One of the original purposes of this federal

legislation was to reduce the gap between advantaged and disadvantaged students and to ensure all students attained high levels of academic achievement (Berliner, 2011; Maleyko & Gawlik, 2011). In fact, it was the first time in American history that federal policy was created to close the achievement gap (Augustine & Freeman, 2011).

Government officials used students' scores from standardized assessments to determine if schools made adequate yearly progress (AYP). A percentage of the students as a whole plus a percentage in each of several target groups had to meet or exceed annual performance targets in tested subjects in order for schools to meet AYP requirements (Linn, 2008). Schools whose test scores failed to demonstrate AYP were labeled in need of improvement and faced consequences including as having to offer students the opportunity to transfer to other schools and provide supplementation education services, such as tutoring, summer school, or after school services (Augustine & Freeman, 2011; Guilfoyle, 2006; Jennings & Rentner, 2006). Schools that were considered in need of improvement for five consecutive years were at risk for being restructured or even taken over by the state.

There was some debate about whether or not NCLB achieved its goal of reducing the achievement gap. President George W. Bush (2004) stated in his weekly radio address, "We have recently received test results that show America's children are making progress" (par. 6). Although this was two years after NCLB had been implemented, the test results to which Bush referred were from standardized assessments students had taken one year before the implementation of the federal law and had been reported in the 2003 National Assessment of Educational Progress (NAEP) report (Fuller, Wright, Gesicki, & Kang, 2007). Loveless (2003) corroborated,

pointing out that state-led accountability reforms which were enacted before NCLB were likely what had truly accounted for the progress children was making.

Other research studies supported these findings, showing there are still disparities between children from low socioeconomic families and from middle to high socioeconomic families (Berliner, 2006; Cunningham & Sanzo, 2002; Hogrebe & Tate, 2010; Lee, 2006; Plank & Condliffe, 2013). In fact, the achievement gap has only widened over the past 50 years (Reardon, 2011). Fuller et al. (2007) used long-term data from the NAEP to determine the achievement gaps had not closed since NCLB became law. In reading, for example, there was no evidence of progress in closing either the Black-White or Latino-White achievement gaps. While the Latino-White achievement gap in mathematics closed only slightly, the Black-White gap remained unchanged. In fact, the researchers reported the average gains among all groups have slowed since 2003, one year after NCLB was implemented, and progress in closing the gap have remained stalled.

What is more difficult to debate is that the implementation of No Child Left Behind has been an instrumental factor in creating a system of public schools where high-stakes accountability is the norm. The high-stakes consequences from this accountability have greatly affected students, teachers, and schools (Mason, 2007; Smyth, 2008). Groves (2002) argued the high-stakes accountability required by NCLB, in the forms of testing and policies that demand educational excellence, has actually worsened conditions and widened the gap.

Common Core State Standards. Accountability has become even more complicated since the introduction of the Common Core State Standards (CCSS).

These national standards were intended to provide a framework to ensure that children were ready for college and the workforce (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010a). The standards cover expectations for English language arts and mathematics for children in grades kindergarten through 12. Under the premise that the CCSS would replace individual state standards, federal Title I funding and federal waivers for No Child Left Behind were given contingent upon state adoption of the national standards (Center for Public Education, 2013; Hart, 2014; Sloan, 2010).

The Common Core State Standard initiative came into the public view in 2009. On May 28, 2009, U.S. Secretary of Education Arne Duncan gave a speech to the National Press Club in which he accused states of setting the bar too low to comply with the requirements for No Child Left Behind (U.S. Department of Education, 2009a). Duncan stated that the country was engaged in a "race to the bottom" and state standards had been "dumbed down" (par. 1). He believed the trend could be reversed by the creation of common, internationally benchmarked standards. In June 2009, the National Governors Association and the Council of Chief State School Officers organized a group of individuals to create a set of national standards in English language arts and mathematics (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010a).

A few months later Bill Gates, millionaire, philanthropist, and founder of the Bill and Melinda Gates foundation, spoke to the National Conference of State Legislatures (Bill and Melinda Gates Foundation, 2009). He claimed the U.S. had been in an "education crisis" for decades (par. 5). One way to change this would be to have a

common set of national standards that were more rigorous than those standards individual states currently had in place. Gates believed the national standards, which were being written at the time of his speech, combined with curriculum alignment and assessment was the key.

Shortly after Gates' speech, Secretary Duncan and President Obama announced $10 billion in federal grant money was available to states and districts that were driving education reform (U.S. Department of Education, 2009b). This national reform competition was called *Race to the Top*, in reference to Secretary Duncan's comment about education's race to the bottom in his speech from a few months earlier. States could apply, or compete, for a portion of this federal money. These applications were scored on a variety of factors, including 40 points for those states who adopted and implemented standards that builds toward "college and career readiness" (U.S. Department of Education, 2009c, p. 7). Some have contended that the federal government is pushing for the adoption of Common Core because the phrase used on the application is very similar to the slogan found on the official CCSS website: "preparing America's students for college and career" (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010a, n.p.).

In March 2010, a draft of the K-12 standards was released for public comment via an online survey (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010a). According to the CCSS official website, almost 10,000 surveys were completed and submitted. The public comments were used to make changes and, on June 2, 2010, the final version of the Common Core State Standards was released.

The CCSS were offered free to the states as long as they agreed to accept all standards and assess students' mastery within 3 years (Center for Public Education, 2013). In 2010, two multi-state consortia, the Smarter Balanced Assessment Consortium (SBAC) and the Partnership for Assessment of Readiness for College and Careers (PARCC), won federal grants to develop the assessments for Common Core (U.S. Department of Education, 2010). Researchers shared their fear about the high-stakes nature of the assessments used in the implementation of the CCSS (Karp, 2013/2014; Mathis, 2010). The National Center for Fair and Open Testing (2013) confirmed these fears by reporting even more tests were flooding classrooms and with these tests, high-stakes accountability.

How High-Stakes Accountability Affects Classrooms

There has been a great deal of research on the potentially negative effects of high-stakes accountability on students, teachers, and schools. Research has shown that high-stakes accountability affects classrooms in two key ways: 1) content, or what is being taught and 2) instructional practices, or how the content is being taught.

Effect on content. High-stakes accountability has affected content because teachers have narrowed the curriculum to focus on the core subject areas that are being assessed, such as language arts and math, and ignored other fields of study. McMurrer (2008) investigated the changes in instructional time in elementary schools since the implementation of NCLB in 2002. There was an increase of time being spent on the two tested subjects, language arts and mathematics, by an average of 42%. The average reduction of time spent on all other subjects was 32%. The narrowing of the curriculum has had a drastic effect on social studies and science. Over half of the schools reported

a decrease in both social studies and science by at least 75 minutes for each subject per week. This decrease in social studies and science has had negative implications on student learning in that students are being robbed of experiences that encourage inquiry. Engaging projects, such as testing for pollution in local parks or visiting the legislature, have been cut to ensure more time for language arts and mathematics (Nichols & Berliner, 2008).

High-stakes testing has been detrimental for non-academic subjects, such as the arts, physical education, and recess. Schools have cut back and even eliminated programs in the arts and physical education (Kohn, 2000). Eliminating fine arts programs opposes current educational research, as there are relationships between the arts and academics. Children create representations through the use of mathematical, verbal, and written symbols (Berliner, 2011). Music, dance, and visual arts can provide alternative ways for children to represent the world. Arts education has been shown to improve cognition and to promote social relations (Gullant, 2008; Hanna, 1992). Participation in music has positive correlations with children's academic achievement, especially in math (An, Capraro, & Tillman, 2013; Southgate & Roscigno, 2009). When the arts are eliminated from public schools, some children lose all access to these creative opportunities. While wealthy and, possibly, middle class families can afford to pay for private lessons, families in poverty typically cannot. This leads to inequitable situations creating *haves* and *have-nots* based on student access.

The decreases in time for physical education and recess are just as damaging. Researchers have reported a connection between physical activity and academics (Tremarche, Robinson, & Graham, 2007; Trost, 2007). Decreasing or even eliminating

opportunities for physical activity does not lead to improved academics. Rather, regular physical activity is associated with higher levels of academic achievement (Trost & van der Mars, 2010). It is incongruous that in a time when childhood obesity is on the rise and children are more sedentary, overweight, and show signs of Type 2 diabetes, that physical education and recess are being removed from the school day (Berliner, 2011). Elimination of physical activity is not only harmful to children's academics but it can also be harmful to their health.

In 2013, the American Academy of Pediatrics published a policy statement on the crucial role of recess in schools. The organization differentiated between recess and physical education, defining recess as periods of unstructured physical activity and play that are regularly scheduled throughout the day. Recess should supplement, not substitute, physical education. The benefits of recess are seen across development, including in the cognitive, physical, social, and emotional domains, meeting the needs of the whole child (Jarrett, 2002; Pellegrini, Kato, Blatchford, & Baines, 2002; Ramstetter, Murray, & Garner, 2010). Despite the research demonstrating the importance of recess, the amount of time spent in unstructured outdoor play has decreased since mandates, such as NCLB, has made high-stakes accountability more prevalent (McMurrer, 2007; Henley, McBride, Milligan, & Nichols, 2007). A report from the Center for Public Education (2008) found time at recess in elementary schools had decreased from an average of 60 minutes to 50 minutes per week. In schools identified by NCLB mandates as *in need of improvement*, recess decreased to an average of 47 minutes per week, or less than 10 minutes per day. In some schools, the teachers themselves decided to reduce the amount of recess time to a mere 15 minutes

per week to increase the time available for academic instruction (Booher-Jennings, 2005). These examples demonstrate a growing trend of recess reduction that has occurred in many early childhood programs across the country.

Teachers who are pressured by high-stakes accountability often cite lack of time to engage children in instructional practices they know to be appropriate. American education has long been criticized for being a "mile wide and an inch deep" (Schmidt, McKnight, & Raizen, 1997, p. 122). Many teachers hurry through lessons in an effort to cover all of the content required for their grade level. This fast paced schedule often includes pacing calendars that are rigid and do not allow for flexibility and differentiation to meet the needs of the students (Jones, 2007). The pace of instruction can be so quick that some students never catch up. Teachers are less likely to engage students in more in-depth explorations of topics simply because they do not have the time. It is even more challenging in states that assess students a few months before the end of the school year. For example, the teachers in the states that give standardized tests in February must cram nine months of curriculum into the first six months of school in order for the students to be prepared to take the tests (Jones, 2007).

Effect on instructional practices. The pressure of high-stakes accountability has compelled many teachers to make changes in their instructional practices. Wilson (2007) reported a substantial majority of the elementary teachers who were surveyed, stated high-stakes accountability has forced them to teach in ways conflicting with their idea of appropriate instructional practice. Teachers are less likely to engage in child-centered approaches and more likely to use teacher-directed practices and skim over the material in a superficial manner due to pressure to cover all content that will be on the

tests (Berryhill et al., 2009; Vogler & Virtue, 2007). Au's (2007) metasynthesis of 49 studies found a significant number reported incidences of teachers moving from child-centered to teacher-directed instructional practices in response to the high-stakes testing associated with accountability mandates.

Valli and Buese (2007) confirmed the movement from child-centered practices, stating high-stakes accountability promotes an environment that forces educators to enact instruction that is often at odds with what they believe to be best practices. With the implementation of teacher-directed methods, there is often a focus on "low-level knowledge and skills through the use of rote level, discrete, individual drill and skill practice" (Jones, 2007, p. 70). Nearly three-quarters of the participants in a study by Barksdale-Ladd and Thomas (2000) offered examples of how their instruction had changed, including the discontinuation or infrequent engagement of children in activities that were pleasant, provided reinforcement of skills, promoted deep understandings, involved students to work together and collaborate, encouraged independence, necessitated higher order thinking skills, or had goals that were not measured by the tests.

This engagement in unfavorable instructional practices is sometimes related to the prominence of excessive test preparation, or teaching to the test. The term *teaching to the test* is common in American education. Teaching to the test occurs when the curriculum heavily focuses on preparing for standardized assessments. In an early study on the effects of high-stakes testing on teachers' instruction, Shepard and Dougherty (1991) found between two-thirds and three-quarters of teachers who they studied, emphasized more traditional, basic skills instruction, including paper pencil

tasks because of the implementation of mandated tests. Furthermore, 69% of these teachers stated they emphasized the skills and content they knew would be on the test.

More recent studies have found similar results. Half of the teachers surveyed by Diamond (2007) reported high-stakes accountability pushed them to engage in more test preparation. Popham (2001) noted some teachers used "clone items", or look-alike questions that were so similar to actual test items that it was difficult to tell the difference between the two (p. 16). Mary Lemon, a second grade teacher, summarized the pressure that many teachers feel:

> Everything that has to do with the test has been given such a high priority, that there is no priority any more but that … The bottom line question comes down to, "Well, what's going to help them do better on the test?" And if it's not going to help them do better on the test, well, we don't have time for that right now (Wright, 2002, p.10).

Unfortunately, teaching to the test most often occurs in schools with students at the lowest socioeconomic levels (Firestone et al., 2002; Herman, 1992; Moon, Callahan, & Tomlinson, 2003). Schools have replaced curriculum materials with test-preparation materials that have no other use than practicing for tests (Cunningham & Sanzo, 2002). This has hit low income schools especially hard. The money for these test preparation materials has to come from somewhere. While some middle class and wealthy schools can make up the costs in local funding, many low income schools do not always have this option. They must divert already scarce educational dollars from other areas of the budget (Hursh, 2007; McNeil & Valenzuela, 2001).

Nevertheless, not all researchers found high-stakes accountability had a negative effect on teachers' instructional practices. Diamond (2007) studied elementary teachers and found most did not believe standards and testing influenced their instructional decisions. Of those who did report this type of accountability influenced their teaching,

the responses about the type of affect were mixed. Some stated they used more whole-class instruction, encouraged children's recitation of correct answers, and focused more on teaching basic skills because of the pressure from accountability. However, a significant group of teachers believed the pressure from accountability brought positive attributes to their teaching, including engagement in practices consistent with a constructivist philosophy. Hence the question arises, what makes teachers react negatively or positively to this pressure? In an effort to fully understand the inconsistencies between teacher beliefs and practices, a thorough discussion of Piaget's constructivist theory will be followed by the potential conflicts between high-stakes accountability and constructivism.

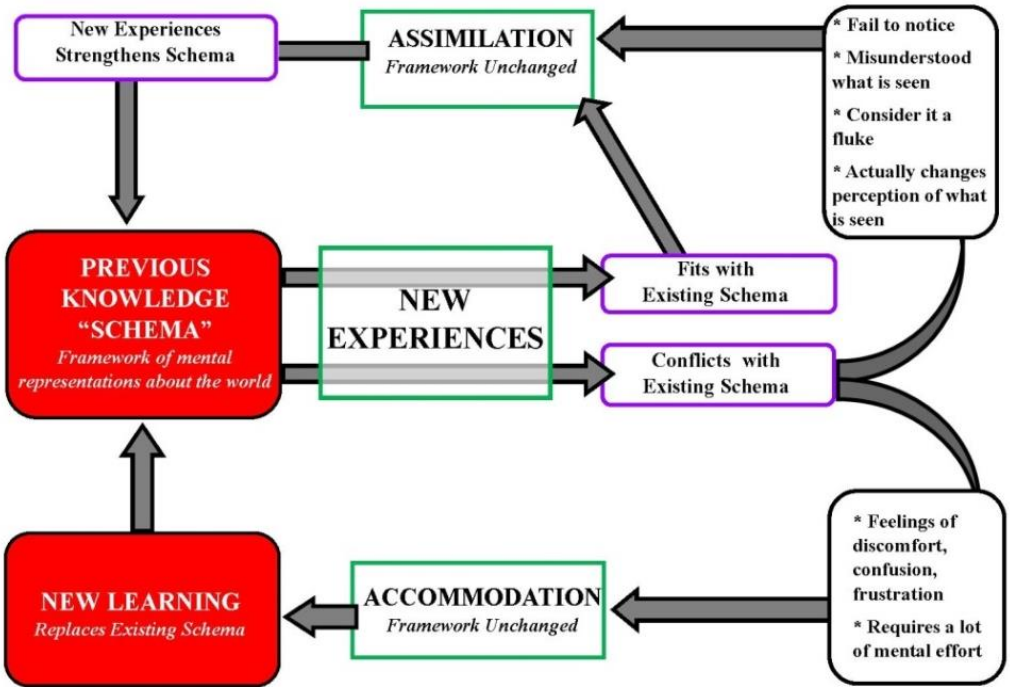
Constructivist Theory of Piaget

The roots of constructivism can be traced to the theories of Jean Piaget (Mooney, 2000). Piaget was a Swiss epistemologist who was interested in the nature of knowledge. That is, he wanted to know how children knew what they knew. Piaget believed individuals construct their own knowledge by cognitive adaptation and the restructuring of their schemas (Piaget & Inhelder, 1969). Schemas are the mental frameworks that an individual uses to organize and understand the world. These mental representations are created through interactions with the environment. When an individual has an experience that does not match his schemas, he is put into cognitive dissonance, or disequilibrium (Piaget, 1967/1971).

Disequilibrium can be resolved in one of two ways, assimilation or accommodation (Piaget & Inhelder, 1969). Assimilation occurs when an individual uses the existing schema to deal with the new experience. It is not, however, a passive

process. The individual must modify or distort the environmental input to make it fit the existing schema. Accommodation occurs when the individual is confronted with information that cannot be interpreted by current schemas and the schema is altered to deal with the new experience. Assimilation and accommodation are complementary processes that allow the individual to return to cognitive balance, or equilibrium. Learning and cognitive advancement is the result of both assimilation and accommodation (Piaget, 1967/1971). An overview of how individuals construct knowledge, adapted from Calver (2012), is shown in Figure 4.

Figure 4: Construction of Knowledge



Note. Adapted from Calver, P. (2012, June 23). *Constructivism*. Retrieved from http://pdbites.blogspot.com/2012/06/week-9-term-2-preparing-to-learn.html

Piagetian constructivist theory contends there are three different types of knowledge: social-arbitrary, physical, and logico-mathematical. Piaget (1977) wrote about the relationship between two of the types of knowledge, physical and logico-

mathematical. He did not write about the third type, social-arbitrary knowledge. In a tribute for Hermina "Mimi" Sinclair De-Zwart in the newsletter for the Jean Piaget Society, Kamii (2000a) noted:

> Piaget never identified social [arbitrary] knowledge as the third kind of knowledge, but Mimi, the linguist, unmistakably found it in *Play, Dreams, and Imitation*. As can be seen in that book, Piaget was, of course, aware of conventions as another source of knowledge but did not elevate conventions to the position of the third source of knowledge (par. 12).

DeVries (2000) agreed with Kamii on the genesis of social-arbitrary knowledge, stating she had never seen it mentioned in the works of Piaget but believed Mimi Sinclair De-Zwart was responsible for adding it to Piagetian theory.

Although Piaget did not specifically name social-arbitrary knowledge, it is still an essential concept in constructivist theory. Social-arbitrary knowledge is conventional knowledge particular to one's culture that can only be transmitted from person to person through oral or written language (Kamii, 1982). An example is the name of an object such as a pencil. An individual would not know the object was called *pencil* unless he had been told by someone or read a label. Another example of social-arbitrary knowledge is that people get upset when a person writes with a pencil on the wall. Writing on paper instead of the wall is something young children often learn from their parents at an early age through oral transmission. Other examples of social-arbitrary knowledge include names, customs, and labels. Because social-arbitrary knowledge comes from an external source, it is impossible to construct this type of knowledge (Kamii, 1982).

Physical knowledge is the knowledge of an object in an external reality (Kamii, 1982). This type of knowledge includes observable facts about the features of an object such as shape, weight, texture, and color. Two examples of physical knowledge about a

pencil are that pencils are yellow and pencils are hard. This is knowledge children acquire by feeling, manipulating, exploring, and experiencing using pencils. Logico-mathematical knowledge, on the other hand, is an abstract knowledge dealing with the relationships between objects (Kamii, 1982). The source of logico-mathematical knowledge is internal because it is constructed by an individual. An example of logico-mathematical knowledge is a child's knowledge of six pencils. While the label of six is social-arbitrary knowledge and the six pencils are all observable as physical knowledge, the understanding of six is logico-mathematical knowledge. Each individual constructs his or her own understanding and meaning of *six-ness* (Kamii & DeVries, 1980).

Another example is two pencils, one short and one long. The lengths of the pencils are observable characteristics and examples of physical knowledge. However, when an individual creates a relationship about the pencils, such as they are different because one is shorter or longer than the other, the individual has constructed logico-mathematical knowledge. In this way, physical knowledge forms the basis for logico-mathematical knowledge (Kamii, 1982). The observation of short and long (physical knowledge) is necessary to construct the relationships that the pencils are different (logico-mathematical knowledge). According to Williams and Kamii (1986), it is impossible to separate physical and logico-mathematical knowledge because they depend on one another and develop together. Piaget (1977) described the two types of knowledge as "inseparable" (p. 41). Without observable features, relationships cannot be constructed.

The idea that humans move through four stages of development from infancy to adulthood is another key aspect of Piagetian constructivist theory. These stages are

related to how an individual thinks rather than what the individual knows (Santrock, 2012). Each stage is distinct in that the individual has a different way of thinking about and understanding the world. The four stages of development are the 1) sensorimotor stage, 2) pre-operational stage, 3) concrete operational stage, and 4) formal operational stage (Piaget, 1964). While some children are transitioning into the concrete operational stage, most children in kindergarten and the early primary years are typically in the pre-operational stage of development. The pre-operational stage of development is typically described as encompassing ages 2–7 years. However, many children are still in this stage at 8 or 9 years (Peterson & Felton-Collins, 1986). Piaget and Inhelder (1969) noted while children move through the stages in the same order, they do not move through at the same rate.

Piaget and Inhelder (1969) described several characteristics of thinking that are unique to children in the pre-operational stage of development. While overall their thinking has become more logical, children still rely on perception and intuition to make sense of their world. A feature of the pre-operational stage of development is egocentrism. Children who are egocentric have difficulty seeing a point-of-view or perspective other than their own. It involves children believing that their way of thinking is the only way. An example of a child who is egocentric is one who answers the telephone and nods when asked if the mother is home. This child fails to appreciate the person on the other end cannot see him nodding.

Another characteristic of the pre-operational child is centration. Centration refers to the ability to focus on only one thought or characteristic at a time (Piaget & Inhelder, 1969). An example of centration is a child who complains there is no paint

left in her big cup, even though there is enough paint left to finish the project. In this case, the child is only considering how full the cup looks as the indicator of having paint. If the paint were transferred to a smaller cup, the child would likely be satisfied because the cup would appear to be fuller. As a child in pre-operations, she focused on a single dimension while ignoring other dimensions about the situation. As children move out of the pre-operational stage and into concrete operations, they begin to decenter and are able to consider more than one characteristic at a time. Decentering is an indicator a child is transitioning into concrete operations (Peterson & Felton-Collins, 1986).

Closely related to centration is the third characteristic, irreversibility. Reversibility refers to the understanding that actions can be done and undone (Piaget & Inhelder, 1969). That is, objects can be changed and returned to their original condition (Peterson & Felton-Collins, 1986). A child who does not understand reversibility cannot reverse sequences or logic. For example, if a pre-operational child gets upset because her mother put tomatoes on her veggie burger, she may refuse to eat it even when the tomato has been removed. This is because she believes the burger cannot be restored its pre-tomato condition, or what has been done cannot be undone. In this way, the child demonstrates thinking that is irreversible.

Children in the pre-operational stage have yet to develop their mental abilities for conservation (Piaget & Inhelder, 1969). Conservation is the ability to understand certain physical characteristics of object remain the same, even if their appearance has changed (Peterson & Felton-Collins, 1986). An example of a pre-operational child's inability to conserve is a child who hates carrots and gets upset when his mother cuts

them into smaller pieces because he thinks he will have to eat more carrots.

This inability to conserve was demonstrated by Piaget using tasks in which children were asked to judge size and other physical characteristics (Piaget & Inhelder, 1969). In the conservation of number task, two rows of counters are placed in a line. Each row contains the same number and is arranged so each counter is paired with another. The child is asked to compare the two rows. After the child agrees there is the same number of counters, one row is changed. That row is spread out so it appears to be longer than the other row. The actual amount of counters does not change. The child is asked again to compare the two rows. A child in the pre-operational stage will rely on perception to determine the spread-out row has more counters than the row that remained unchanged. In his case, the child centers on the length of the row and does not take into consideration the number of counters (Osborn & Osborn, 1983). The impact of the change in physical size of the row overrides the fact that the two rows began with the same number of counters.

In the later primary years, many children begin to transition into the concrete operational stage of development. Piaget and Inhelder (1969) believed this stage to occur in children approximately ages 7 to 11. The thinking of children in the early primary years is different from those in the later primary years. This change in thinking is not sudden; rather it is a shift over time. It is gradual and uneven. There are even periods in which the children revert to earlier ways of thinking (Tomlinson, 2009). The cognitive shift from the pre-operational to concrete operational stage is different for each child. It should be noted that although children in concrete operations begin to think more logically about concrete events and objects, they typically still have

difficulty understanding abstract and hypothetical concepts.

Moving from pre-operations to concrete operations involves major cognitive transformations for young children. One transformation is children's ability to conserve (Piaget & Inhelder, 1969). In an example given earlier, a pre-operational child thought he had to eat more carrots because his mother cut them into smaller pieces. Had the child been in the concrete operational stage, he would understand the amount of carrots remained the same despite the fact that the appearance had changed. The difference in understanding has to do with the child's ability to decenter, or consider more than one characteristic at a time. In this case, the pre-operational child was unable to consider the carrot as a whole and the pieces of carrots to realize they were the same amount.

Another cognitive transformation is reversibility (Piaget & Inhelder, 1969). Reversibility occurs when children are able to mentally reverse a sequence of steps and understand one step can undo another. In mathematics, for example, reversibility is necessary for a child to understand the inverse relationship between addition and subtraction. Reversibility is also related to reversing the order of relationships in mental categories such as when a child recognizes a cat is a tabby, a tabby is a cat, and a cat is an animal. Kamii (1970) noted reversibility of thought makes operations, or formal logic, possible because the child ceases to be dominated by intuitive thinking.

Children in the concrete operational stage are also able to order items quantitatively, or to seriate (Inhelder & Piaget, 1959/1964). An example is the arrangement of different sizes of sticks from smallest to largest. While children in pre-operations are able to put the sticks in a row, there are typically several errors. At about age 7, children are able to better plan and create the series more efficiently beginning

with the smallest, then the next largest, and so on, until the sticks are ordered (Inhelder & Piaget, 1959/1964). Children are also able to seriate mentally, or make a transitive inference. Transitive inference requires children to use previous knowledge to determine the missing piece. Piaget (1954) observed children comparing three different sized sticks. Stick A is longer than stick B and stick B is longer than stick C. A child in the concrete operational stage of development can infer stick A is longer than stick B. The ability for transitive inference demonstrates the primary grade child's ability for basic logic (Frank, Rudy, Levy, & O'Reilly, 2005). Understanding the differences in children's thinking during these stages can help guide the instructional practices of early childhood educators who use constructivist approaches.

Instructional Practices Based on Constructivist Theory

It is important to note teachers rarely provide instructional practices that completely align with one theory, including constructivism. Rather the practices associated with a particular theory are on a continuum and teachers find themselves at different points on the continuum based on their beliefs and actual teaching practices. They may, however, fall at the end of the continuum that is aligned closer to one particular theory. In the case of this research, the continuum has teaching practices consistent with a constructivist theory at one end and practices conflicting with constructivist theory at the other (Figure 5). Constructivist approaches are based on the theories of Jean Piaget. These teaching practices are descriptive rather than prescriptive (Airasian &Walsh, 1997). The teaching is child-centered and focuses on the process of learning rather than the product. The classrooms are environments conducive to

positive learning dispositions, including curiosity, problem solving, and self-motivation (Brooks & Brooks, 1999).

Figure 5: Continuum of Teaching Practices



Practices that conflict with constructivist theory are at the opposite end of the continuum. These include teacher-directed activities that focus on academics using skill-based, direct instruction with drill and repetition (Thompson, 2004). Value is placed on the product rather than the process. Learning is expected to occur through the transmission of information from the teacher to the student. Classrooms at this end of the continuum are dominated by teacher talk and rely heavily on textbooks, workbooks, and worksheets (Brooks & Brooks, 1999). Children often work in relative isolation, as the structure of the classroom discourages cooperation. Success in these classrooms, according to Brooks and Brooks, has to do more with getting the correct answer than with student understanding.

Kamii (1979) contended behaviorist theory is more limited than constructivist theory. This is because constructivism can explain the intellectual and moral phenomenon that has been described by behaviorism but behaviorism cannot explain phenomenon described by constructivism. Kamii gave the example from the classic psychological experiment of Pavlov's dog. A dog naturally salivates when it smells meat. In the experiment, the researcher rings a bell when presenting the meat to the dog. After several times, the dog associates the bell with being offered meat, or a

conditioned response. Soon, the dog begins to salivate only at the sound of the bell. If the bell continues to ring without the dog getting meat, this conditioned response wanes and eventually returns to original levels. In this case, the dog no longer salivates simply at the sound of the bell. That is, the conditioned response becomes extinct. Behaviorist theory asserts conditioning and extinction occur because of external factors (Kamii, 1979). In this case, the link between the ringing of the bell and presentation of the meat weakened, causing the dog to stop salivating when it heard a bell. Kamii explained that the constructivist take on the experiment was when the meat stopped appearing, the dog stopped anticipating it. Conditioning and extinction are simply an adaptation to the environment. In this way, constructivism is able to explain behaviorism.

However, the converse is not true; behaviorism cannot explain constructivism. Constructivist theory explains several changes in children's thinking as they move from one stage of development to another (Kamii, 1979). Piaget and Inhelder (1959/1964) studied thinking about class inclusion in children. In one task, a child is given small animals that included six dogs and two cats. After the researcher asks the child to show him all of the animals, all of the dogs, and all of the cats, the child is then asked if there are more dogs or animals. Young children typical answer there are more dogs. In response to the question, "Than what?", the child answers, "than cats." Children in preoperations are unable to consider the two parts, the dogs and cats, while also considering the whole, the animals. When children become older, their thinking becomes reversible and they are able to consider the part and whole simultaneously. Kamii noted behaviorist theory is unable to explain why young children state there are more dogs than animals. After all, no external stimulus reinforced this idea.

Behaviorist theory is also unable to explain why later, without any teaching, children state there are more animals than dogs.

It is not just children's development of logic that behaviorist theory is unable to explain. Kamii (1979) presented the example of moral development that demonstrates the limitations of behaviorist theory. Adults often use sanctions to get children to behave in specific ways. Sanctions encourage children to be heteronomous because their actions are being dictated by adults using punishment or rewards. While behaviorist theory is able to easily explain children's heteronomous behavior, it cannot explain their autonomous behavior. Autonomy occurs when an individual refuses to be influenced by rewards or punishment and makes choices based on what he believes to be right (Kamii, 1984). It is only through a broader theory, such as constructivism, that both heteronomy and autonomy can be explained (Kamii, 1979). Through this and the previous examples, it is clear that behaviorist theory is more limited than constructivist theory.

Table 1, adapted from Brooks and Brooks (1999), describes what would be seen in classrooms on both ends of the continuum. Constructivist classrooms are those in which teaching practices reflect a constructivist theory. Traditional classrooms are those in which practices conflict with constructivist approaches, such those based on behaviorist theory.

Table 1: A Look at School Environments

Traditional Classrooms	Constructivist Classrooms
Curriculum is presented part to whole, with an emphasis on basic skills.	Curriculum is presented whole to part, with emphasis on big concepts.
Strict adherence to fixed curriculum is highly valued.	Pursuit of student questions is highly valued.
Curricular activities rely heavily on textbooks and workbooks.	Curricular activities rely heavily on primary sources of data and manipulative materials.
Students are viewed as "blank slates" onto which information is etched by the teacher.	Students are viewed as thinkers with emerging theories about the world.
Teachers generally behave in a didactic manner, disseminating information to students.	Teachers generally behave in an interactive manner, mediating the environment for students.
Teachers seek the correct answer to validate student learning.	Teachers seek the students' points of view in order to understand students' present conceptions for use in subsequent lessons.
Assessment of student learning is viewed as separate from teaching and occurs almost entirely through testing.	Assessment of student learning is interwoven with teaching and occurs through teacher observations of students at work and through student exhibitions and portfolios.
Students primarily work alone.	Students primarily work in groups.

Note. Adapted from Brooks, J. G. & Brooks, M. G. (1999). *In search of understanding: The case for constructivist classrooms*. Alexandria, VA: ASCD.

Key Components of Instructional Practices Consistent with Piaget's Theory

Different researchers have described key components of teaching practices that are consistent with a constructivist theory. DeVries et al. (2002) named seven general principles teachers can use to align their instructional practice with constructivist theory: 1) Create a positive sociomoral atmosphere that includes mutual respect and the promotion of autonomy; 2) Identify and use the children's interests to create engaging

activities that provide opportunities for choice; 3) Understand the three types of knowledge and teach accordingly; 4) Choose content that challenges children at differing developing levels; 5) Promote children's reasoning through careful responses to errors, providing counterexamples, creating opportunities for disequilibrium, and asking questions; 6) Provide adequate time for investigation and in-depth engagement; and 7) Link ongoing documentation and assessment with curriculum. DeVries and Zan (2012) believed the best way to promote the construction of knowledge was to 1) Engage children's interests, 2) Encourage active experimentation, and 3) Foster cooperation between children and adults and children themselves. Brooks and Brooks (1999) described five overarching principles of constructivist approaches: 1) Teachers seek and value their students' points of view; 2) Classroom activities challenge students' suppositions; 3) Teachers pose problems of emerging relevance; 4) Teachers build lessons around primary concepts and "big" ideas; and 5) Teachers assess student learning in the context of daily teaching.

Branscombe et al. (2014) described six instructional practices based on constructivist assumptions in terms of how children learn. These researchers believed children learn as they 1) engage in self-selected, authentic tasks, 2) act on objects and interact with others, 3) are interested and intrigued about a phenomenon, 4) refine and coordinate old ways of thinking, 5) represent what they know to others, and 6) engage with other people. In this paper, constructivist approaches will be defined as these six instructional practices plus the two key concepts of autonomy and the value of misconceptions and errors as learning opportunities.

Autonomy. In Piagetian constructivism, developing autonomy, or the ability to think for oneself independent of reward and punishment, is the overall goal of education (Kamii, 1984). It is through autonomy that children learn to make their own decisions. Autonomy is sometimes believed to be synonymous with complete freedom. Kamii explained why this is an inaccurate characterization. An autonomous individual does not do as he pleases, nor does he consider only himself when making decisions. Rather, he takes all relevant factors into account before making decisions. The prospect of rewards or punishments, however, is not part of these relevant factors. In essence, autonomy is doing the right thing because it is the right thing to do, not because of the possibility of a reward or punishment.

Heteronomy, the opposite of autonomy, is being governed by someone else (Kamii & DeVries, 1980). An individual who is heteronomous is regulated by either positive sanctions (rewards) or negative sanctions (punishments). Examples of rewards in the classroom are candy, stickers, and praise. When a teacher gives a reward such as stickers, the child is likely to engage in certain actions to get the reward. In essence, the child's actions are dictated by the teacher. In general, rewards such as stickers, candy, or praise encourage heteronomy because the individual is being governed by others.

Punishments also encourage heteronomy. Examples of punishments in the classroom include time-outs, standing in the corner, or writing *I will not* sentences 100 times (DeVries & Zan, 2012). Sanctions in the form of punishments are punitive and arbitrary because they have no connection to the offending act. Kamii (1984) described the three different outcomes of these punitive sanctions. The first outcome is blind conformity. An individual who is a blind conformist simply obeys and no longer makes

decisions for himself. The benefit to him is he has security and respectability from those who govern him. The second outcome of being punished is calculation of risk. This occurs when an individual makes a decision based on whether the pleasure from the action will be worth the possible pain from the punishment. An individual who calculates risk is likely to repeat the offending act and try not to get caught in the subsequent attempts. Again, the individual is governed by those giving the punishments. The third outcome of punishment is revolt. An individual in revolt is living for himself and engaging in behaviors outside of societal expectations or rules. Although this may seem similar to autonomy, the difference is intent. The intent of autonomy is doing the right thing because it is the right thing to do. The intent of revolt is simply to oppose conformity.

The overall problem with sanctions, both in the form of rewards and punishments, is that they prevent the development of autonomy (Kamii, 1984). When adults use sanctions to keep children compliant, they are exercising power and encouraging children to be heteronomous. Rather than using rewards and punishments, a teacher whose teaching practices reflect a constructivist philosophy uses reciprocal sanctions, such as natural consequences and restitutions. A natural consequence for a child who leaves the lids off of her markers is that the markers will dry out and no longer be usable. An example of restitution is when a child colors on the walls, he must clean the wall of his mess, with help if the child's age necessitates it. With natural consequences and restitution, the child is learning not to behave to please or to avoid punishment. Rather, he behaves in an autonomous way as he constructs his own morality of what is right and wrong (Kamii, 1984).

The self-governing nature of autonomy is important for children's moral and intellectual development. A morally autonomous individual will do the right thing because it is the right thing to do, regardless of the possibility for a reward or punishment. Kamii (1984) gave the example of Elliott Richardson as being an extreme case of moral autonomy. Richardson, the attorney general for President Nixon, refused to cover up the Watergate scandal and resigned rather than obey the president. In this way, he did what he believed to be right, even when being pressured and under the threat of punishment. Civil disobedience, such as that practiced by Ghandi and Martin Luther King, is another example of moral autonomy. These men stood up for what was right even though they knew they might be punished based on the laws of the time. A less extreme example of moral autonomy is a child who refuses to go along with a group of peers who are planning to cheat on a test.

Autonomy is also important to children's intellectual development. An intellectually autonomous individual is convinced about the truth of his own idea and will not say things he honestly does not believe (Kamii, 1984). Kamii gave the example of Copernicus, the 16th century astronomer who went against accepted knowledge of the time and claimed the earth revolved around the sun. Children have the opportunity to demonstrate intellectual autonomy as well. An example is the child who is willing to give an answer that is different from what the teacher states as the answer. While a heteronomous child agrees with the teacher even when not completely convinced she is right, an autonomous child makes a case for what he believes to be the correct answer. To encourage intellectual autonomy, teachers should focus less on whether a child gets a correct answer and more on how the child got the answer. That is, the focus should be

on the process rather than the product. Unfortunately, many teachers focus on the product by marking incorrect answers wrong. Kamii pointed out that when this occurs, children are convinced only teachers have the knowledge. An alternative is for a teacher to follow-up on an incorrect response by asking how the child got the answer. When doing this, the child has the opportunity to explain his process and, may, recognize and correct his own mistakes. In this way, the child becomes more confident and gains trust in his own thinking.

Value of misconceptions and errors. Misconceptions and errors provide valuable information to early childhood educators. In the preface of Kamii and DeVries' (1993) book on physical knowledge in the early childhood classroom, Piaget wrote it was children's errors rather than their successes that were more beneficial to their learning. It is important to note the difference between an error and a misconception. An error is typically procedural, such as an incorrect application or a mistake (Schlöglmann, 2007). A misconception, on the other hand, is a difference in the individual's meaning and the meaning of the concept itself (Kaldrimidou &Tzekaki, 2006). Oliver (1989) described a misconception as an alternate conception of the idea while errors are the symptoms of children's misconceptions. That is, errors are what are likely to occur when children have misconceptions.

Errors may seem to be synonymous with wrong answers; however, they are much more than that. DeVries, Haney, and Zan (1991) pointed out, an "error is regarded as evidence of intelligence at work" (p. 451). A child's error is based on knowledge that had been previously taught. While some of these derivations are considered to be illogical and wrong, from the point of view of the child, they make

logical sense (Ginsburg, 1977). In fact, it is by understanding children's misconceptions and errors that teachers can obtain insights into the child's view of the world and tell where guidance is needed.

In an address delivered at a convention for math and science educators, Oliver (1989) posed the question, "Could it be all our frustrated efforts at eliminating errors are due to embracing an inappropriate learning theory?" The idea that misconceptions and errors are valuable to understanding student learning conflicts with some theories of learning. In instructional models based on behaviorist theories, such as the direct transmission approach, errors are not considered to be valuable. In fact, errors are treated as things to be avoided. Gallagher (2004) described a common experience in classrooms, in which schoolwork gets returned to the students with numerous red marks but no feedback. The red marks do not help the students understand why they made the error. Rather, it provides sanctions on the students and serves as an efficient way for teachers to give grades. The long-term effects on the students are often apathy or resistance. When input is given, teachers often try to fix the errors by simply teaching the correct rule. This does not lead to true understanding any more than a red check mark on a paper.

In constructivist theory, misconceptions and errors are considered to be critically important to both teaching and learning. Misconceptions and errors allow students to construct knowledge (Oliver, 1989). When a child is exposed to a new idea, he has the option of assimilating it to fit an existing schema or accommodating the schema to fit the idea. Changing the schema is much more difficult than changing the idea. Thus, it is more common for individuals to assimilate than accommodate. If the idea does not

fit perfectly into the existing schema, the child will have to distort it. This distortion of knowledge is likely to create a misconception. It is the child's misconceptions of knowledge than can lead to an error. Constructivist educators take advantage of these errors and provide opportunities for cognitive conflict, or disequilibrium. It is while in disequilibrium that the child assimilates, changing the idea, or accommodates, changing their schema. Kamii, Manning, and Manning (1991) described this acquisition of knowledge as occurring by children "creating one level of another of 'wrong' forms of knowledge" (p. 10). It is this constant cycle of assimilation, accommodation, and disequilibrium that cognitive growth occurs.

A common myth is the acceptance of errors leads to a less rigorous classroom (Davis & Sumara, 2002; Kirschner, Sweller, & Clark, 2006). There have even been claims that teachers who have a constructivist philosophy do not believe that accuracy or correctness are important (Davson-Galle, 1999). Under this skewed view, a constructivist teacher accepts any answer that a student gives. The reason it may appear to be this way is because constructivist approaches moves beyond a simplistic, dichotomous evaluation of students answers as right or wrong (Oliver, 1989). Although a teacher who has implemented constructivist approaches does not automatically correct the answer, it does not mean the teacher simply accepts the error. Rather a role of the teacher is to determine how the child made the error (Kamii, 1982). Student errors provide the educator with insights into the child's current conceptions and understandings. They can also give the teacher insight on how to guide the child in refining their knowledge (Gallagher, 2004). After all, errors are a reflection of the

child's thinking and the constructivist theory is concerned with how children know what they know.

Early childhood educators who use constructivist approaches use a variety of strategies to take advantage of the information they receive from students' misconceptions and errors. Teachers can observe to gather information about the child's thinking and record it mentally or in print (Branscombe et al., 2014). When the teacher does not understand a child's thinking she should ask the child to explain. These explanations reveal further student insight, including possible misconceptions that can lead to errors. They can also provide the child with the opportunity to think things through and, perhaps, correct his own error (Gallagher, 2004). Other strategies teachers might use to encourage cognitive conflict are self-assessments, peer discussion, and friendly debates among peers.

Constructivist Approaches and Developmentally Appropriate Practices

In response to high-stakes accountability and back to the basics movement, the leading early childhood education organization, the National Association for the Education of Young Children (NAEYC), created a position statement contrasting appropriate and inappropriate practices for teachers working with young children (Bredekamp, 1986). The next year, the organization published the first edition of the book *Developmentally Appropriate Practice in Early Childhood Programs* (Bredekamp, 1987). The seminal piece of work described developmentally appropriate care for infants, toddler, and preschoolers, as well as strategies for informing others about developmentally appropriate practices. The organization has adapted both its position statement and book based on critiques, open forums, conference sessions, and

multiple meetings (NAEYC, n.d.) using current research from the fields of early childhood education and child development. A revised position statement was adopted in 2009 (NAEYC, 2009) and the most recent edition of the book was published the same year (Copple & Bredekamp, 2009).

Copple and Bredekamp (2009) described developmentally appropriate practices (DAP) as a framework outlining the practices educators use to encourage optimal learning and development in young children. Basic principles of child development inform DAP, including an emphasis on the education of the whole child. That is, all of the domains of development, including cognitive, physical, social, and emotional are important. The domains are interrelated, as development in one domain influences and are influenced by what occurs in another (Copple & Bredekamp, 2009).

NAEYC put forth five guidelines for teachers to promote developmentally appropriate practices including 1) creating a caring community of learners, 2) teaching to enhance development and learning, 3) planning curriculum to achieve important goals, 4) assessing children's development and learning, and 5) establishing reciprocal relationships with families (Copple & Bredekamp, 2009). Copple and Bredekamp asserted that effective early childhood educators use these guidelines in conjunction with their knowledge of child development theory when making decisions about many aspects of teaching, including instructional practices.

An educator who is knowledgeable of child development theory would understand most children in kindergarten and the early primary grades are still in the pre-operational stage of development (Piaget & Inhelder, 1969). Their thinking is different than that of an older child. A child in pre-operations uses intuitive thinking to

create his own explanation of the world. This can lead to some fundamental errors in logic. For example, a young child who sees her brother dressed up in a scary Halloween costume may be convinced he is really a monster. Because of lack of reversible thought, the child may believe her brother will remain this way forever. It is important for early childhood educators to understand children's thinking in order to plan appropriate experiences for the children. In this case, a teacher of young children may decide to forgo dressing up at Halloween so as not to confuse the children.

Developmentally appropriate practices are consistent with constructivism. In fact, principles of DAP were informed by several educational theories, include Piaget's constructivist theory (NAEYC, 1996). Like constructivism, most concepts of DAP rely on children's construction of knowledge through active engagement in first-hand experiences. Teachers are considered to be facilitators and collaborators. Learning is individualized to the children. In classrooms that implement developmentally appropriate practices, children are motivated to learn by their own curiosities and interests. This aligns with constructivist theory, in that children construct individual realities from their environment and social interactions.

Benefits of Constructivist Approaches

Several studies have demonstrated the benefits of instructional practices that reflect a constructivist theory (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984; DeVries, Haney, & Zan, 1991; DeVries, Reese-Learned, & Morgan, 1991; Kamii & Rummelsburg, 2008; Schweinhart, Barnes, & Weikart, 1993; Schweinhart et al., 2005; Schweinhart & Weikart, 1980; Schweinhart & Weikart, 1997; Schweinhart, Weikart, & Larner, 1986; Stipek, Feiler, Daniels & Milburn, 1995;

Weikart, Bond, & McNeil, 1978;Weikart, Deloria, Lawser, & Wiegerink, 1970; Weikart, Epstein, Schweinhart, & Bond, 1978). These studies are summarized in Table 2 and described in detail in the following sections. The overall findings of the studies were that teaching models which align with constructivist theory create more positive sociomoral atmospheres in terms of relationships between the teacher and children. There are also short-term and long-term advantages for the children, including cognitive, social, achievement, and motivation benefits. Two of the research projects, the High/Scope Perry Preschool Study and the High/Scope Curriculum Comparison Study, are of particular importance because they studied the long-term effects of constructivist approaches. The other studies demonstrated how a model based on a constructivist framework can affect the sociomoral environment, achievement and motivation, and mathematical knowledge.

Table 2: Benefits of Constructivist Approaches: Findings from Research Studies

Study	Findings about Constructivist Approaches
High/Scope Perry Preschool Study	*Significant positive differences in school success and long-term community behaviors; Positive cost-benefit ratios*
High/Scope Curriculum	*Significant positive differences in children's social behaviors and attitudes over time*
DeVries, Haney, & Zan (1991) DeVries, Reese-Learned, & Morgan (1991)	*Positive effects on sociomoral atmosphere, including teacher-child relationships and relationships between children*
Stipek, Feiler, Daniels & Milburn (1995)	*Positive effects on children's achievement and motivation*
Kamii and Rummelsburg (2008)	*Positive effects on children's mathematical knowledge*

High/Scope Perry preschool study. An early study that demonstrated the positive effects of teaching practices based on constructivist theories was the High/Scope Perry Preschool Study. Initiated by David Weikart and colleagues, this study assessed the long term effects of the High/Scope preschool program, a model that used Piaget's theory of constructivism as its framework (Weikart et al., 1970). Three- and four-year-old African American children considered to be at-risk were randomly assigned to be in either the program group or comparison group. Children in the program group attended a preschool classroom that used the High/Scope model while those in the comparison group did not receive any preschool services. The initial study investigated children at the end of their enrollment in preschool. Later studies have revisited the same individuals at ages 10 (Weikart, Bond, & McNeil, 1978), 15 (Schweinhart & Weikart, 1980), 19 (Berrueta-Clement et al., 1984), 27 (Schweinhart et al., 1993), and 40 (Schweinhart et al., 2005). This has created a large amount of longitudinal data researchers have used to study the effects of the program on school success, community behavior, and cost-benefit analysis.

Individuals who attended a High/Scope classroom achieved greater school success, as indicated by higher graduation rates, better grades, higher scores on standardized assessments, and fewer students requiring special education services (Berrueta-Clement et al., 1984; Schweinhart & Weikart, 1980). They were also less likely to be delinquent and engage in misconduct as juveniles or to be arrested as adults. High/Scope graduates were more likely to be employed, less likely to be on public assistance, and, on average, earned higher salaries (Schweinhart et al., 2005). These

findings led researchers to the conclusion that people who attended the High/Scope classroom as preschoolers were more likely to be economically stable.

In 2003, Schweinhart presented a cost-benefit analysis based on the data from the High/Scope Perry Preschool Project. He determined the payment made for these individual's preschool education has returned a high rate on the tax-payers' investments. At the time of the analysis, the program yielded benefits in the amount of $105,324 per participant. The cost benefit ratio was $7.16 gained for every $1 of tax-payer money spent. Based on this cost-benefit ratio of 7.16:1, Schweinhart determined the program to be "an extremely good economic investment" (p. 5). Overall, the High/Scope Perry Preschool Project demonstrated the importance of constructivist approaches in early childhood education as an effective intervention for children who are at risk.

High/Scope curriculum comparison study. In the 1960's, the High/Scope Curriculum Comparison Study investigated the effects of three types of preschool models on children (Weikart, Epstein, et al., 1978). Three- and four-year-old children who were considered to be at-risk based on their socioeconomic status were randomly assigned to a classroom that used one of three learning models: the High/Scope model, the Distar model, and a traditional nursery school model. The three models represented different approaches to learning and were based on differing conceptual frameworks (Schweinhart et al., 1986).

The High/Scope model was an open-framework approach consistent with the cognitive developmental, or constructivist, theory of Jean Piaget. The model was characterized by teachers and children working together to plan and initiate activities.

Classroom activities focused on promoting children's cognitive and social development. The Distar model, or programmed-learning approach was a direct instruction program built on behaviorist theory, as exemplified by the work of B.F. Skinner (1938). In these classrooms, teachers led children in precisely planned, question-and-answer lessons (Schweinhart & Weikart, 1997). Classroom activities focused on pre-academic skills taught through drill, repetition, and practice supplemented by positive reinforcements. The traditional nursery school model, a child-centered approach, was originally called "unit based" because activities were based around common themes (Schweinhart & Weikart, 1997, p. 120). Teachers created environments for children to initiate their own learning through free play activities.

The original findings of Weikart, Epstein, et al. (1978) created more questions that initiated other studies. For example, researchers studied the same individuals at ages 15 (Schweinhart et al., 1986) and 23 (Schweinhart & Weikart, 1997). They found very few significant differences between the groups. While the mean IQ scores for all children increased over time, there were no significant differences found based upon the model of instruction. Scores from achievement tests were initially higher for the children in the Distar model group. By the end of elementary school, however, these scores had leveled out and there were no significant differences between the models. This trend continued over time. In fact, the only long-term significant difference related to academics was at age 23, more individuals from the High/Scope group planned to attend a higher number of years of schooling than those from the direct-instruction group (Schweinhart & Weikart, 1997). These plans had yet to come to fruition, as there were no significant differences in the actual number of years of schooling completed.

There were, however, significant differences in children's social behaviors and attitudes over time. In the early years of the study, differences in sociability, cooperation, and academic orientation were very slight but became more pronounced as the children grew older. Individuals in the Distar model group had substantially higher rates of self-reported juvenile delinquency at age 15 than those who in the High/Scope group (Schweinhart et al., 1986). The teenagers from the Distar group also self-reported to engage in misconduct 2 1/2 times more than the amount of misconduct reported by those in the High/Scope group. The researchers explained it was not what the individuals experienced in their preschool classroom that caused higher rates of juvenile delinquency. Rather it was what the direct-instruction model was missing, and the constructivist model included: social behavioral goals. Because the direct-instruction model focused solely on academics and emphasized the direct transmission of knowledge, it was "less successful in helping children adapt to the interpersonal realities of rules and conventions" (p. 42). Because of this, the authors concluded models which focus exclusively on academics, including direct-instruction, may be inadequate in educating young children, especially those from disadvantaged backgrounds.

Personal lives were also affected by the type of preschool program individuals attended. At age 23, adults from the High/Scope group were more likely to be married, participate in volunteer work, registered to vote, and have voted in the last presidential election when compared to those from the Distar group (Schweinhart & Weikart, 1997). Individuals in the Distar group were significantly more likely to be arrested, corroborating their self-reported delinquency and misconduct behaviors from age 15

(Schweinhart et al., 1986). After the last study, which occurred nearly two decades after individuals completed preschool, Schweinhart and Weikart reiterated that programs which focused exclusively on academics did not seem to be in the best interest of the students, especially when considering the long-term effects.

Effects on sociomoral atmosphere. Two studies by DeVries and her colleagues studied sociomoral differences in classrooms based on three different educational paradigms (DeVries, Haney, & Zan, 1991; DeVries, Reese-Learned, & Morgan, 1991). They referred to these as the direct-instruction classroom, constructivist classroom, and eclectic classroom. The direct-instruction classroom was based on a cultural-transmission paradigm. The teacher placed importance on compliance and children's heteronomous behaviors. She exerted her control over the children and used rewards and punishments to manage the children. The teacher in the cognitive-developmental, or constructivist classroom, used a paradigm based on the theory of Jean Piaget. Teacher-control was minimized and emphasis was placed in student-decision making and autonomy. She showed respect for the children, demonstrated by taking into account their thoughts and feelings. The eclectic classrooms had components of both the direct-instruction and constructivist classrooms.

In their study on sociomoral atmospheres in kindergarten classrooms, DeVries, Haney, and Zan (1991) focused on the interpersonal relationship between the teacher and the children. The framework used to study these relationships included two different types of teacher-child interactions: negotiation strategies and shared experiences. Negotiation strategies occur during interactions when there is disequilibrium in the interpersonal dynamics. The interactions took place at levels

ranging from 0, at which primarily physical actions determine what happens, to 3, at which mutual understanding occurs. Shared experiences occurred during interactions where the interpersonal dynamic is in equilibrium. These interactions also ranged from Level 0, where the experience is because of a contagious enthusiasm and one-sided, to Level 3, where the experience is truly shared and based on mutual collaboration.

DeVries, Haney, and Zan (1991) found significant differences in both negotiation strategies and shared experiences based on the educational paradigm of the classroom. Higher levels of negotiation strategies and shared experiences were observed in the constructivist teacher. She engaged in more level 3 negotiation strategies and level 2 and 3 shared experiences than the other two teachers. The direct-instruction teacher engaged in more low level strategies and experiences. This indicated the constructivist teachers' interpersonal understandings were at a higher level than that of the other two teachers. These findings were consistent with the sociomoral atmosphere observed in the classrooms. The relationships between the teacher and the children in the constructivist classroom were more reciprocal and collaborative than in the direct-instruction or eclectic classrooms.

In a companion study, DeVries, Reese-Learned, and Morgan (1991) studied the interpersonal interactions between children in kindergarten classrooms based on the same three paradigms used in the previous research. The children were observed during two situations that were likely to cause conflict and test the limits of their cooperation: the board game situation and the sticker division situation. In the first situation, pairs of children played a game which they were comfortable with the rules. The second situation involved the children dividing stickers.

While most of the negotiation strategies between the pairs of children were low level, the children from the constructivist classroom consistently had the highest percentage of Level 2 strategies when compared to children from the other two types of classrooms (DeVries, Reese-Learned, & Morgan, 1991). Children in the constructivist group also had a greater number and variety of negotiation strategies and shared experiences, indicating they were more interpersonally active. During conflict, these children also demonstrated more advanced interpersonal understanding and resolved twice as many conflicts as the children from the direct-instruction and eclectic classrooms.

The findings from the two studies by DeVries and her colleagues (i.e., DeVries, Haney, & Zan, 1991; DeVries, Reese-Learned, & Morgan, 1991) suggests a relationship between sociomoral atmosphere and children's sociomoral development. Children who are in environments where relationships are primarily teacher-centered have limited opportunities to develop interpersonal understandings than children who are more cooperative environments that encourage reciprocity in relationships. In terms of the specific programs investigated in this study, constructivist approaches allow children to develop more capacity for intimacy and cooperation than direct-instruction and eclectic programs (DeVries, Reese-Learned, & Morgan, 1991).

Effects of instructional programs on achievement and motivation. Stipek et al. (1995) examined the effects of instructional approaches on children in preschool and kindergarten. Unlike previous studies that had focused primarily on African American children from low income families, this study's sample was diverse in terms of both ethnicity and social class. These researchers also classified the classroom differently.

Rather focusing on the curriculum models teachers implemented, Stipek and colleagues used two major categories: the social context and the nature of instruction and evaluation. The social context included three subscales: child initiative, teacher warmth, and positive control. The three subscales that determined nature of instruction and evaluation, or academic focus, were basic skills focus, performance pressure, and evaluation stress. A factor analysis indicated an inverse relationship between these categories. The researchers labeled classrooms that scored low on the social subscale and high on the academic subscale as *didactic*. Classrooms that scored high on the social subscale and low on the academic subscale were labeled *child-centered*. It should be noted that many of the descriptions of the child-centered classrooms are consistent with constructivist approaches as defined in the current study. Only programs that could be clearly categorized as either didactic or child-centered were studied.

While there were no significant differences between the two groups in mathematics achievement, children from the didactic classrooms performed better on assessments of letter recognition and reading (Stipek et al., 1995). The researchers believed this could be because memorization is important in these two tasks and memorization is greatly emphasized in the teacher-directed instruction observed in didactic classrooms. Thus, children in the didactic classrooms would have more experience with memorization. Children from the didactic classrooms did not perform better in all areas of literacy. While the study by Stipek and colleagues did not assess content-oriented literacy, Goldenberg (1994) found skills learned in didactic classrooms were not as effective with this type of literacy. Another important point is that Stipek et

al. assessed the effects of program type on academics over a short period. Research from the High/Scope Curriculum Comparison study (Weikart, Epstein, et al., 1978) demonstrated the effects on achievement may only be temporary and may subside over time.

Stipek et al. (1995) also found several significant differences in the social context. Individuals from the child-centered classrooms scored higher on motivation-related measures. For example, those in the child-centered group had rated their abilities significantly higher than children in the didactic group. They also had higher expectations for their own success. They selected more challenging tasks, were less dependent on adult approval, were less anxious about school, and demonstrated more pride in their accomplishments than those in the didactic group. The researchers explained high scores on motivation-related measures were likely the results of the opportunities children were given to make choices, decisions, and initiate their own activities. Research on intrinsic motivation by Deci and Ryan (1995) supports this explanation.

Effects on mathematical knowledge. Kamii and Rummelsburg (2008) studied differences in mental arithmetic and problem solving among two groups of low-performing first graders: the constructivist group and the comparison group. The constructivist group engaged daily in physical knowledge games throughout the first half of the year. The rationale was that these games would foster the creation of mental relationships, developing the logico-mathematical knowledge necessary for understanding number concepts. During the second half of the school year, children in the constructivist group were introduced to addition games as soon as they

demonstrated readiness. By February, most were able to successfully play arithmetic games and solve word problems. The comparison group consisted of children from a neighboring school who had pre-test scores similar to children in the constructivist group. Individuals in the comparison group were also considered to be low-performing in mathematics. They were given worksheets each day that focused on correctly answering addition problems.

Post-test scores from an assessment of mental arithmetic and word problems were used to compare the two groups (Kamii & Rummelsburg, 2008). Students in the constructivist group answered more mental arithmetic problems and word problems correctly than those in the comparison group. Although the children in the constructivist group did not do any arithmetic in the first half of the year, they still scored higher on the mental arithmetic tasks when compared to children who had used arithmetic worksheets the entire year. The researchers noted building understanding of logico-mathematical knowledge through physical knowledge games appeared to give the children in the constructivist group a good cognitive foundation that enabled them to learn arithmetic easier than the comparison group.

Criticisms and Counter Arguments of Constructivist Approaches

There are some who criticize instructional practices based on constructivist theory. Davis and Sumara (2002) believed the subject-centered constructivist theory of Piaget did not have anything to offer to education. "Theories developed in psychology, sociology, cultural studies or elsewhere cannot be unproblematically transplanted into the field of education" (p. 417). They reasoned the field of education has very different concerns, goals, and concepts than that of the social sciences. Davis and Sumara

continued by stating constructivism was never intended to have practical application to education. Other theories, such as behaviorism, better fit with the field of education. However, Gordon (2009) argued even the theory of behaviorism received critiques when its main concepts of conditioning, rewards, and punishments were first applied to behavior management in education. It was only after time that behaviorist theory was accepted as being practical to education.

Constructivism, unlike behaviorism and other theories that have influenced instructional practices, is not as easy to define because there has been a wide range of historical periods and philosophical traditions associated with the constructivist theory (Gordon, 2009). This has created, for some, the impression that constructivist approaches means "anything goes" (Davis & Sumara, 2010, p. 410). Baines and Stanley (2000) claimed the teacher in the constructivist classroom simply sets up the learning environment based on what the children is interested in and then walks away. The view misrepresents what the teacher actually does. While a role of the teacher is to create and organize experiences in the classroom, she does this only after carefully listening to children's ideas and explanations of their mental activities (Green & Gredler, 2002). The teacher uses this knowledge to further facilitate the children's thinking by asking probing questions. The "eliciting and supporting students' own thinking" can help the teacher challenge the children to rethink their ideas (Langer & Applebee, 1987, p. 77).

Potential Conflicts Between High-Stakes Accountability and Constructivism

Researchers and other experts have criticized high-stakes accountability as a reason for the continued use of practices that are inconsistent with a constructivist

philosophy (Brooks & Brooks, 1999; Meisels, 1989; NAEYC & NAECS-SDE, 2003; Schwartz, 1997; Smith, 1991; Wantabe, 2007). As schools and districts feel the pressure from the mandates associated with high-stakes accountability, they often put pressure on those who are on the front lines, the teachers. Brooks and Brooks (1999) noted reform in education should start with "*how* students learn and *how* teachers teach, not with legislated outcomes" (p. 4). Unfortunately, during this era of high-stakes accountability, public policy that is mandated by decision makers outside of the educational system is what drives the reform but causes challenges for early childhood educators.

Adherence to high-stakes accountability can be a challenge for early childhood educators who engage in constructivist approaches. Many early childhood educators have strong beliefs about wise practices for young children. They are able to talk about the importance of developmentally appropriate practices and providing meaningful, open-ended experience and in-depth explorations. However, some feel compelled to use practices conflicting with their basic philosophy of teaching and learning, such as scripted curriculum and testing. Since most early childhood educators are genuinely concerned about meeting the needs of their students and the requirements of their schools and district, this puts additional pressure on them.

Concerns about unrealistic expectations can be seen throughout early childhood. For example, many mathematics education experts, including professors, math specialists and coaches, and math teachers, have concerns about the Common Core State Standards for mathematics. A letter drafted by Susan Jo Russell and Steven Leinwand (2010) and signed by several experts stated the standards were flawed,

especially in the primary years, because children were required formal mastery of key skills before they had sufficient instruction and experience. The children, in their view, were unable to develop the conceptual basis for the skills Common Core required them to have mastered.

An example of a concern specific to early childhood was the kindergarten standards for base-ten numeration (Russell & Leinwand, 2010). One math standard under the domain of number in operations in base ten, CSS.Math.Content.K.NBT.A.1, states children will work with numbers 11–19 to understand place value and understand numbers are made up a group of 10 and ones (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010b). This standard was written with the assumption that kindergarten children understand 10 is both a unit of 10 and 10 units of 1. In other words, children must be able to conceptualize the number as both a whole and composite parts (Clements & Sarama, 2009). This assumption conflicts with understandings about the thinking of children who are in the pre-operational stage of development. A characteristic of this stage is centration, or the inability to focus on more than one characteristic at a time (Piaget & Inhelder, 1969). Thus, a child in pre-operations, as most kindergarten children are, would be unable to simultaneously think of 10 as both a unit of ten and 10 units of one.

In fact, Kamii (2004) explained that it is not until children are in about second grade that they can begin to think about tens and ones at the same time. It is a cognitive challenge; but as children transition into the concrete operational stage, they start to understand. If it is difficult for a second grader to think about tens and ones simultaneously, it is unlikely a kindergartener would be able to think about tens and

ones simultaneously. Thus, a kindergarten child might be able to parrot the phrase 57 is 5 tens and 7 ones, but parroting back is not the same as true understanding. Other research, including Ross (1986), M. Kamii (1980), Kamii (2000b), and Clements and Sarama (2009), support the assertion that children typically do not understand place value this early. However, the expectation of Common Core, the standards which have been adopted in most states and will be the basis for standardized testing, is this level of place value should be mastered by the end of kindergarten.

Jones and Egley (2004) studied teacher perceptions of the Florida Comprehensive Assessment Test, a state-mandated standardized assessment. Some of the educators felt that trying to meet the mandates associated with the test, such as covering specific curriculum in a short amount of time, forced them to teach in ways they did not believe to be developmentally appropriate. One teacher gave the example of teaching decimals to her third-grade students. She did not believe that her children were cognitively ready to learn the content. However, she felt pressure from her administrators to cover the content so her students would be prepared to take the test. While she admitted most of the students did pass that section of the test, she knew they only had surface level, procedural understanding. Describing her students, she stated, "I can teach them to jump through the hoops to pass the test but true understanding is not happening" (p. 14). Implementing constructivist teaching practices that are congruent with educators' understanding of children's cognitive development can help teachers meet the needs of their students.

For too many teachers, however, there does not seem to be an option to use teaching practices that are reflective of constructivist theory. This is interesting

considering the number of studies that have shown children in classrooms using constructivist approaches do just as well, if not better, than those in other environments (Berrueta-Clement et al., 1984; DeVries, Haney, & Zan, 1991; DeVries, Reese-Learned, & Morgan, 1991; Kamii & Rummelsburg, 2008; Schweinhart et al., 1993; Schweinhart et al., 2005; Schweinhart & Weikart, 1980, 1997; Schweinhart et al., 1986; Stipek et al. 1995; Weikart et al., 1970; Weikart, Epstein, et al., 1978; Weikart, Bond, & McNeil, 1978). Fortunately, there are early childhood educators who have the autonomy to implement a teaching practice based on appropriate practices for young children, even when faced with the pressure of high-stakes accountability. The questions that arise include how are some early childhood educators able endure these pressures and continue to align their instruction with constructivist theory? What experiences have the educators had that has influenced their teaching practices? What factors have impacted their teaching practices? How has their teaching been influenced by policies? This study will investigate these questions as it explores what it means to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability.

Chapter 3: Methodology

This research study was an in-depth qualitative study conducted from an interpretivist paradigm (Glense, 2011) utilizing hermeneutic phenomenology. The purpose of this research was to examine the experiences of early childhood educators with constructivist philosophies who teach in the current system of education. The primary question that guided this study was: What does it mean to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability? The sub-questions were as follows:

1) What experiences have these teachers had regarding their teaching practices from parents, colleagues, administrators, and others?
2) What factors have impacted these educators' teaching practices?
3) How have these teachers' instructional decisions been affected by policy initiatives at the school level, district level, and government level?

Research Design

Qualitative research is "a set of interpretive, material practices that make the world visible" (Denzin & Lincoln, 2005, p. 2). The focus of this type of research is on meaning and understanding rather than quantification and generalization. Qualitative research includes observations, descriptions, interpretations, and analysis of how humans understand their experiences in the world around them in the context of their day-to-day situations (Bazeley, 2013; Miles & Huberman, 1994). This qualitative study used thick, rich descriptions of the individual experiences of early childhood educators whose teaching practices reflect a constructivist philosophy in an era of high-stakes accountability.

Hermeneutic Phenomenology: An Interpretivist Paradigm

This research was from an interpretivist paradigm, as its central purpose was for understanding (Glense, 2011). Interpretivism focuses on shared meanings made by the researcher and the participants. Interpretivist researchers use their skills as social beings to understand how others make sense of their world (O'Donoghue, 2006). This study searched for the essence of early childhood teaching in the contexts of practices based on a specific philosophy, a specific type of school, and a specific historical, social, and political time using a hermeneutic phenomenology framework.

Phenomenology is one type of interpretivist research. Introduced by German philosopher Edward Husserl, classical phenomenology involves in-depth explorations of experiences, or phenomena, in order to clarify their essences (Grbich, 2013). Not all experiences are appropriate for in-depth study. Bazeley (2013) differentiated between experiences in general and experiences of significance. Individuals are not typically aware of each element occurring during experiences in general. They are, however, typically aware during experiences of significance. In fact, significant experiences considered to be phenomena were those that "have already been the subject of reflection, thinking, and feeling by the experiencing person" (Bazeley, 2013, p. 193). The phenomenon in this study was the practices of early childhood educators who use constructivist approaches in an era of high-stakes accountability.

The focus of phenomenological research is on first-person experiences (Grbich, 2013). As individuals experience everyday life, they construct individual meanings. A study with a phenomenological framework describes these constructed meanings in what van Manen (1990) referred to as "lived experiences" (p. 25). He wrote "the point

of phenomenological research is to 'borrow' other people's experiences and their reflections on their experiences in order to better come to an understanding of the deeper meaning and significance of an aspect of human experience, in the context of the whole human experience" (p. 62). In this way, the methods of phenomenology are intended to bring the experiences and perceptions of the research participants to the forefront of the study.

As with other types of qualitative research, phenomenological studies are meant to describe rather than to explain. Grbich (2013) expanded on this, noting a phenomenological framework should be used when "the rich detail of the essence of people's experience of a phenomenon is to be explored, described, communicated and possibly interpreted" (p. 92). The notion of interpretation is an important part of most qualitative research, as described by Davis (1995):

> …the subject first understands [the experience], then interprets that understanding into an explanation for the researcher. In turn, the researcher understands the account and then interprets the understanding into a written text. Finally, readers interpret the written text, bringing their own intentionality to it. (p. 125)

Lester (1999) believed adding an interpretive dimension enables the research to be used for practical theory by informing, supporting, or challenging policy and action.

Hermeneutic phenomenology is the art and science of interpretation and meaning (Henriksson & Friesen, 2012). The approach weaves together the interpretations about a lived experience of both the participant and researcher to uncover layers of details and identify the essence of that lived experience (van Manen, 1990). Using a hermeneutic approach fit with my conceptual framework of constructivism because I co-constructed an understanding of what it means to be an early childhood educator in an era of high-stakes accountability with the participants.

This co-construction occurred as I collected and interpreted descriptions of the teachers' experiences in order to determine their essence. My aim was to illuminate these educators' lived experiences because the meanings were not always readily apparent (van Manen, 1990). While the experiences of early childhood educators have been previously researched, the complex nature of teaching practices based on a constructivist theory in an era of high-stakes accountability is a unique experience that needed to be explored.

Participants

Selection of the participants is a crucial step in conducting a phenomenological research study, as the participants will collaborate with the researcher to share and reflect upon their lived experiences (van Manen, 1990). Participants should have the lived experience but also be diverse enough from one another to increase the likelihood of rich and unique stories about the experience (Laverty, 2003). The participants in this research had to fit the two major criteria of the study. First, they had to teach in a public school at the early childhood level in kindergarten to third grade. Second, they had to use teaching practices consistent with constructivist theory, specifically autonomy and the value of misconceptions and errors as learning opportunities, as well as using the six practices described by Branscombe et al. (2014). These included: 1) engage in self-selected, authentic tasks, 2) act on objects and interact with others, 3) are interested and intrigued about a phenomenon, 4) refine and coordinate old ways of thinking, 5) represent what they know to others, and 6) engage with other people. Although the participants for this study all met the criteria for the study, they were diverse enough to each have a unique story. This diverseness came from the differences

in their district, school, grade level taught, university attended, previous experience, and number of years of experience.

Snowball Recruitment

I used purposeful sampling (Patton, 2002) to choose early childhood educators whose teaching practices reflect a constructivist theory as previously defined. Specifically, the snowball sampling method (Lincoln & Guba, 1985) was used to find teachers who fit the criteria. This form of participant recruitment allowed me to obtain participants through a network of recommendations. Snowball sampling was necessary because it might otherwise have been difficult to identify potential participants who met all of the criteria. I asked individuals whom I considered to be expert authorities on constructivism, including professors from local universities who taught early childhood education courses with a constructivist philosophy, for referrals of teachers who would meet all criteria. Once the initial group of participants was established, I asked them for names and contact information of other teachers to consider for participation. To ensure these potential participants met the criteria of the study, I asked them to respond to questions about their philosophy via email and I observed them engaged with students in the classroom.

Upon referral of potential participants, I contacted them by telephone or email to determine their interest in participating in the study. Once I determined they were interested, I sent recruitment letters for them to review and waited for a written response that confirmed their interest. We communicated by either telephone or email to set up the first interview. It was at the first in-person meeting that I provided each participant

with an IRB approved consent form to sign. After signatures were gathered, I commenced with further data collection.

Rationale for Selection

Seven early childhood educators participated in this study. This number was consistent with the research design. The purpose of qualitative research is not to generalize but rather to focus on the experiences of specific individuals (Glense, 2011). By focusing on seven teachers, the voice of each educator was heard in the research. Having seven teachers also allowed for representation from different grade levels in the early childhood years. When executing a phenomenological study, Dukes (1984) advised studying three to ten subjects. Seven participants was a sufficient and manageable number that still fell within the range suggested by the literature.

Although early childhood education includes birth through third grade, I chose to focus on teachers who taught kindergarten through third grade. Infant and toddler teachers would not meet the criteria for working in a public school. There were many public school pre-kindergarten programs available to study. However, there did not appear to be as much testing in pre-kindergarten as there are in the primary grades. The pressure from high-stakes accountability appeared to have affected kindergarten classrooms considerably. This was evidenced by the removal of materials that offer opportunities for play, such as blocks, sensory table and props for dramatic play, from many kindergarten classrooms and replacing them with highly prescriptive curricula that emphasize preparation for standardized testing (Gallant, 2009; Miller & Almon, 2009; Nicolopoulou, 2010). This academic pushdown seemed to have turned kindergarten into the new first grade (Bassok & Rorem, 2014; Graue, 2010). The

pressure was even more prominent in first and second grades. While state testing did not typically begin until the third grade, many primary grade teachers felt compelled to prepare the children for future standardized tests (Gallant, 2009).

Despite the fact that third grade is included in the definition of early childhood education, none of the participants taught third grade. Three third grade teachers were recommended during the snowball recruitment process. However, upon observation none of these teachers currently used practices that met all of the criteria for the study. The fact that no third grade teachers who used constructivist approaches could be identified was another indicator of the movement from child-centered approaches toward the use of teacher-directed methods during the current era of education.

Participants

The participants in the study have been identified by a pseudonym. Each had the option of choosing her own pseudonym but all declined. Thus, I chose their pseudonyms at random. All of the participants were female and Caucasian. This was not a prerequisite for the study, however, this is typical as the majority of early childhood educators are white, middle class females (Drudy, 2008; National Center for Education Studies, 2014; Sargent, 2005). Table 3 lists an overview of the participants, in alphabetical order by their first name. Below is a description of each school followed by a narrative about the participant or participants who taught at the school.

Table 3: Participants in the Study

Participant	Elementary School	Current Grade Level	Years in Current Grade	Total Years Teaching
Barbara	Grant	2nd Grade	1 ½ years	3 ½ years
Cindy	Grant	1st Grade	½ year	18 years
Haley	Henderson	Kindergarten	3 ½ years	4 years
Janet	Grant	1st Grade	1 ½ years	5 years
Kathy	Simpson Upper	1st Grade	1 ½ years	1 ½ year
Nadine	Simpson Upper	1st Grade	½ year	2 ½ years
Rachel	Grant	Kindergarten	2 ½ years	3 ½ years

Grant Elementary. Grant was one of approximately fifty elementary schools in the large urban district. The school served a diverse population of students in pre-kindergarten to grade five. The neighborhood children were mostly Caucasian and from high socioeconomic households. There were also a number of minority students from low-income backgrounds who transferred into Grant. Over one-third of the students qualified for free or reduced lunch. This created a unique community of 400 diverse learners not typically found in the other schools in the district. The participants who taught at Grant were Rachel, Janet, Cindy, and Barbara.

Rachel (kindergarten). Rachel started her education as a business management major at a university in a neighboring state. While attending school, she took a job as a substitute teacher and quickly decided she wanted to teach full time. Upon the completion of her business degree, she started classes at an education program with a constructivist philosophy at a public research university. Rachel considered herself to be an ideal student because she did not have preconceived notions about what it meant

to be a teacher. While her classmates were often in disequilibrium because of their prior experiences with behaviorism, she knew nothing but constructivism. Two years later, she completed her second Bachelor degree, this one in early childhood education.

Rachel spent the first 9 months of her education career teaching toddlers in a Head Start program. She felt it was "very easy to be a constructivist teacher in this situation." Even though she enjoyed her time with the toddlers, she desired to work with children at the elementary school level. The following fall, the kindergarten classes at Grant Elementary were too large and the school needed a third teacher. Rachel applied and accepted a position in September. Being a constructivist teacher in the public school was "much more difficult" but Rachel persevered and is currently in her third year of teaching kindergarten at the school.

Janet (first grade). Janet has been a certified teacher for five years. She started her career shortly after she graduated from the same public university that Rachel attended. Janet left college knowing she would implement constructivist approaches in her classroom. She believed it would be easy to put her philosophy to practice when working with young children. She was surprised to discover the other teachers in her first two experiences, working with three-year-olds in a Head Start and teaching pre-kindergarteners in a public school, used pre-planned themes, cookie cutter crafts, letter of the week, and group times that lasted nearly an hour. As the only teacher using interest-based projects and process oriented art, Janet felt like an "island" floating all by herself.

Teaching at Grant Elementary has been a different experience for Janet. Eight years earlier, Janet's mentor, Peggy, came to the school to teach pre-kindergarten.

Peggy brought a wealth of knowledge and experience using constructivist approaches in a Reggio-inspired environment. As teachers retired or left, she encouraged teachers with philosophies similar to hers to apply for the openings. Janet had done her student teaching with Peggy and knew this was a good opportunity to be part of a community of like-minded educators. Being with other early childhood educators who had similar approaches provided Janet with the support she was missing in her previous teaching experiences.

Cindy (first grade). Cindy's entry into early childhood education was at an early childhood center in a local church. When a longtime preschool teacher retired, Cindy asked for the opportunity to take over the position. Eighteen years later, she was still an early childhood educator. Cindy learned about aspects of constructivism, including the Project Approach, while earning her Bachelor degree from a regional teaching college. She did not consider herself to be a constructivist teacher in a "purist form." However, she identified herself to be more constructivist than traditional, as demonstrated by her commitment to encouraging children to take ownership of their learning.

Cindy has been strongly influenced by Waldorf education. While teaching at the church preschool, she discovered Waldorf education and flew out of state three times a year to learn how to implement the approach in her classroom. Oral storytelling was the biggest Waldorf influence in Cindy's classroom. She spent several weeks on the same story, retelling it several times until the children "can tell it in their bones." Cindy easily integrated Waldorf-inspired approaches in her pre-kindergarten and kindergarten classrooms. This year was different; it was the first time Cindy had taught

first grade and she struggled to fit all of the requirements of the grade into the school day.

Barbara (second grade). Barbara had been a constructivist teacher for several years but she did not have the name for her approach until she entered college in her late 30's. She received her Bachelor degree from the same research university as many of the other participants in the study. After graduation, Barbara taught for two years in a community-based early childhood preschool program that targeted families who live in poverty. At first she did not share the same philosophy as her co-teachers, making it a difficult situation for Barbara. The other teachers used behaviorist approaches. Soon, a former classmate with a similar teaching philosophy accepted a position next door. This gave Barbara the support she needed to cultivate her constructivist approaches.

Last year, Barbara moved to Grant Elementary to teach second grade. She worked hard to balance the expectations of the grade level with her philosophy of teaching. While she still followed the district-mandated curriculum map and used parts of the reading series, she also facilitated projects based on the children's inquiries. Many of these projects focused on naturally occurring phenomena. Barbara considered herself to be a co-learner in the classroom, gaining as much from the investigations as her students.

Simpson Upper Elementary. Simpson Upper Elementary was in the same large, urban district as Grant Elementary. The school was located next door to Simpson Primary Elementary. The primary school served pre-kindergarten, kindergarten, and two dual language first grade classrooms while the upper school serves the remaining first grade classrooms and second through sixth grade. Although the buildings were on

the same campus, they were considered separate schools, each with their own administrator. The school was located in an area of the city with an expanding population of immigrant families. Nearly half of the children who attended Simpson Upper Elementary were Hispanic and English Language Learners. The remainder was Caucasian, African American, Native American, and Asian. The school had been designated Title I, with about 98% of the 1,100 children qualifying for free or reduced lunch. Kathy and Nadine were teachers at Simpson Upper Elementary.

Kathy (first grade). Kathy was the only participant who did not graduate with a degree in early childhood education. Her Bachelor degree and certification were in elementary education. This was her second year of teaching first grade. She started her career with a traditional classroom. Midway through the year, she realized something was not working. After a relative told her about a private school that was Reggio-inspired and whose teachers implemented constructivist approaches, Kathy visited several classrooms in the school and decided this was the change her classroom needed. She researched the philosophy by visiting other classrooms and reading various books and articles.

As Kathy learned more during her first year, she made small changes to her classroom. Over the summer she completely overhauled her classroom and curriculum. She purchased authentic materials at garage sales to redesign the physical environment. Group times were shortened and used mostly for community building among the children. A majority of the day was spent focused on the children's interests, including two extended free-choice center times with open-ended materials that encouraged collaboration and exploration. One of the most notable changes was the elimination of

rewards from her classroom. Rather than bribing the children to be good, Kathy encouraged them to be autonomous and do the right thing because it is the right thing to do.

Nadine (first grade). Like many other participants, Nadine also graduated from the early childhood program at the research institution. She had two years of experience using constructivist approaches in a Reggio-inspired pre-kindergarten and kindergarten multi-age classroom. This was her first year at Simpson Upper Elementary. She transferred to the school to support Kathy in her constructivist journey. Nadine's classroom was adjacent to Kathy's. Her classroom was designed to be inviting and child-centered. There were comfortable places for her first graders to play and rest. An upholstered arm chair sat near a wooden container of books. Several fluffy pillows lined the floor of a large, wooden gazebo. Children took clipboards to do their work throughout the room. A variety of open-ended materials were available to the children and there is little that is off limits for them to use.

As a teacher, Nadine was also child-centered. She consistently made decisions about her teaching based on what is in the best interest of her students. Like the other participants, she used play-based centers and projects instead of following the prescribed curriculum. Nadine believed an essential part of being an early childhood educator is advocating for developmentally appropriate practices. It was through her advocacy efforts that she built relationships with parents, educators, and other professionals in the field.

Henderson Elementary. Henderson Elementary was located approximately 15 miles outside of the large urban district that houses Grant Elementary and Simpson

Upper Elementary. Serving over 700 pre-kindergarten to fifth grade students, Henderson was the largest of four elementary schools in the suburban district. The building was relatively new, replacing two of the neighborhood schools. Henderson had been designated Title I, with nearly 80% of the students qualifying for free or reduced lunches, a percentage higher than district averages. Over half of the students were Caucasian, while most of the other students were multiracial or Native American. There were four kindergarten teachers at the school and participant, Haley, was one of them.

Haley (kindergarten). Haley graduated with a Bachelor degree in early childhood education from the same public university as most of the other participants. She had 15 hours toward her Master degree in early childhood education. However, she had recently applied for a graduate program in counseling and is awaiting an admissions decision. Haley had been an early childhood teacher in public schools for four years. She taught first grade for one semester and kindergarten for a year in the urban district the other participants teach in before she moved to her current position teaching kindergarten at Henderson.

Haley struggled to balance her constructivist philosophy with the expectations of her administrator and colleagues. For example, because she did not follow the same themes as the other teachers at her grade level, her assistant principal claimed she was "not a team player" and scored her extremely low on the collaboration section of her evaluation. Being the only teacher in the school who uses constructivist approaches made Haley very lonely. However, it was the continued contact with her former university that gives her the support system she does not have at her school. The

professors consistently sent pre-service teachers to her classroom to implement projects and to do field experiences and student teaching experiences.

Data Collection

I used five different data collection methods: individual interviews, observations, a group interview, document review, and field notes. Using multiple sources allowed me to cross-verify, helping me make meaning while triangulating the data (Bazeley, 2013; Glense, 2011). This also supported the trustworthiness and credibility of the qualitative research.

Individual Interviews

Interviews with those who have first-hand knowledge are an important source of data in phenomenological research (Grbich, 2013). Van Manen (1990) described two specific purposes for interviews in hermeneutic phenomenological research. First, interviews are used to explore and gather narrative data that will help the researcher further understand the phenomenon. Second, interviews help the researcher develop a relationship with those who have lived the experience and, together, create meaning of the experience. Interviews allowed me to gain a perspective about the lived experiences of early childhood educators who teach using constructivist approaches during an era of high-stakes accountability. Using interviews also supported the conceptual framework of constructivism because it allowed the co-construction of meanings about the participants' experiences.

Multiple interviews are necessary in order to seek clarification and explore illuminated aspects further (Grbich, 2013). Follow-up discussions are important in order for the interviewer and interviewees to further interpret the significance of the

phenomenon (van Manen, 1990). I conducted two individual, semi-structured interviews with each participant during the course of the study. Langdridge (2007) stated that in hermeneutic phenomenology, experiences are best understood through stories. These stories can be expressed through conversations. The semi-structured interviews used in this research were "guided conversations rather than structured queries" (Yin, 2009, p. 106). Van Manen (1990) noted it is important to relate the question in the interview back to the fundamental question of the phenomenology, in this case *What does it mean to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability?* The interviews included questions about their experiences as a teacher who uses constructivist approaches, changes in teaching practices, instructional decision making, challenges facing constructivist teachers, and resources or support systems (Appendix A).

The use of two semi-structured interviews was supported by previous studies. Been (2012) conducted two individual semi-structured interviews with each teacher in her hermeneutic phenomenology on professional identities during a time of increased accountability. Although Evans (2012), who researched effective teaching practices in the era of accountability, conducted three interviews per person, the initial interview only assessed whether the teachers met the criteria to become participants. Thompson (2004) had a similar interview schedule. The first interview was used to determine if participants were a good fit. Since the teachers in my study were referred to me by experts in the field, an initial interview to assess if the potential participants meet criteria was unnecessary. Thus, the use of two interviews per participant was congruent with previous research.

The individual interviews took place on a date and time convenient for the participant at the location of her choice. Some of the participants wanted to meet in their classrooms while others chose a meeting room at a nearby college. In one case, the interview took place in the participants' home. Each interview was recorded with a digital recorder and self-transcribed. Transcribing the interviews myself allowed me to become more familiar with the data and ensure accuracy (Bazeley, 2013; van Manen, 1990). The interviews were transcribed shortly after they occurred to ensure the full context is documented. Participants had the opportunity to read the transcript and validate or correct information before analysis occurred, or member check (Bazeley, 2013). This also allowed the participants to reflect on the text to give as much interpretive insight as possible (van Manen, 1990).

Observations

An important part of a phenomenology is the understanding of the context of the lived experiences. Patton (2002) believed observation to be the best way to fully understand the complexities of the phenomenon of interest. Yin (2009) agreed, stating observations can often provide additional details about the phenomenon being studied. Observations can add a new dimension for further understanding. I observed each teacher engaged in teaching in the natural classroom environment during a typical school day. This supported the idea that researchers should "enter the lifeworld of the persons whose experiences are relevant" (van Manen, 1990, p. 69). The observation of the participant occurred between the individual interviews to ensure I had the opportunity to ask follow-up questions to the participants. Other researchers, including

Hirsch (2005) and Alonzo (2006), also conducted one naturalistic observation per participant in order to better understand each one's experience.

During the observations, I recorded field notes to document and fully described the actions observed. There were three main purposes for the observations in this study. First, the observations allowed the educators' pedagogical practices to be observed and recorded. Second, the observations helped me make connections to the topics and issues discussed in the individual interviews and group interview. Third, the observations provided opportunities to add thick, rich description and context for a more in-depth understanding. While the observations did not necessarily directly answer the research question, they were a valuable tool for collecting data necessary to the study.

Group Interview

After interviewing and observing each participant, I conducted a 90 minute group interview with all participants. The group interview allowed the early childhood educators to further reflect and expound upon their experiences in a dynamic, interactive environment. When listening to and engaging with others who had similar experiences, the participants generated additional and different information than they previously shared during the individual interviews (Bazeley, 2013). This was consistent with Kleiber's (2004) idea that the group is greater than its parts. Other researchers have used similar data collection methods in their research. For example, Been (2012) conducted a 1-hour group interview with participants in her study on professional identities in early childhood educators. After preliminary individual interviews, DuBois (2010) conducted an interview with all of her participants in order to follow up on her

initial findings. McQuiston (2010) used a group interview to validate, elaborate, and clarify themes identified during previous interviews with participants.

The purpose of the group interview was to explore common ideas and themes found during the individual interviews and observations. It also focused on ideas that are important to the teachers. My role was that of a facilitator, as described by Glense (2011). To prepare for the group interview, I wrote a general set of questions based on the literature and added more based on the topics and emergent themes that arose from the interview and observations (Appendix B). The interview was conducted in a meeting room at a college that was centrally located for all of the participants. The tables in the room were arranged so all participants were able to see and hear one another. After introductions, I asked the semi-structured questions I prepared, ensuring each participant was heard and had the opportunity to share her viewpoint. I posed follow-up questions and redirected as necessary. At the end of the allotted time, I gave each participant the opportunity to speak and share any final thoughts. The group interview was recorded on a digital audio recorder and later transcribed.

Using a group interview as a data collection method was congruent with hermeneutic phenomenological research because it stimulated discussion that provided a better understanding of what it means to be an early childhood educator who uses constructivist practices in an era of high-stakes accountability. It was also consistent with the conceptual framework of constructivism because as the participants and researcher discussed, we co-constructed new understandings about the phenomenon at hand.

Document Review

Grbich (2013) considered the collection and review of documents to be essential to phenomenological research. Reading documentation allows the researcher to seek "the perspective of others… [while] recording your own understandings and experiences" (p. 96). Other researchers have successfully collected documents as supplementary data to add insight and context to participants' experiences. Thompson (2004) collected and analyzed documents in her study. Hirsch (2005) used document analysis in her research on women in educational administration. Galbraith (2007) reviewed documents to add to the information gleaned from interviews and observations. Shapiro (2007) considered her document analysis to be essential for triangulating other data she had collected on the experiences of child care directors on 9/11.

Documents were gathered throughout the data collection period. Document review helped me better understand the essence of early childhood educators who use constructivist approaches in an era of high stakes accountability. It has also stimulated further inquiry that I pursued during the interviews and group interview. I asked participants if there were any documents to help answer the questions being studied. Examples of the documents that were analyzed included school and district policies, state & federal initiatives, testing manuals, newspaper articles, and information from public websites. All collected documents were included in the analysis phase of the research.

Field Notebook

A field notebook is "the primary recording tool of the qualitative researcher" (Glense, 2011, p. 71). Other researchers, including DuBois (2010) and Shapiro (2007), have kept field notes in their research to capture their thoughts, observations, and impressions during data collection. This was supported by van Manen (1990) who believed recording insights and reflections can help the researcher discern patterns that may not have otherwise been noticed. I electronically recorded both data and memos throughout the study. Writing my reflections, including my own assumptions and biases, helped me construct further understanding of the phenomenon. Overtly naming my assumptions and biases, as opposed to naming and bracketing is a key difference between hermeneutic phenomenological and phenomenological research (Laverty, 2003).

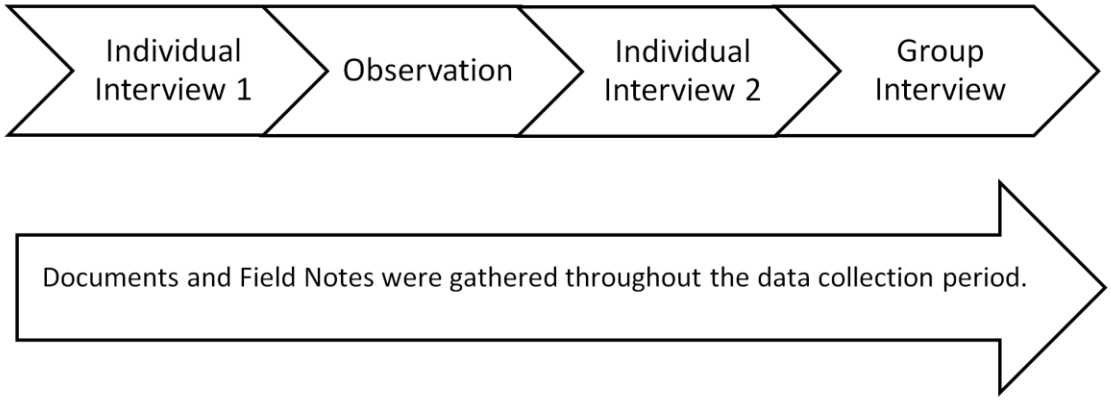
All entries from the field notebook were labeled with the date, time, location, and context and include the actual words spoken by the participants, when possible (Bazeley, 2013). Specific facts and details, sensory impressions, including sights, sounds, textures, and smells, and my personal responses to experiences were also included in the field notes (Chiseri-Strater & Sunstein, 1997). I expanded the data recorded in the field notebook within 48 hours of taking the notes to ensure I recorded as many details as possible (Glense, 2011). I used the computer program NVivo as a tool to store my field notes.

Data Collection Sequence

Following approval from my committee and the Institutional Review Board (IRB), I started the process of receiving permission from the school districts to observe

the teachers in their classrooms. The school districts which employed the participants each had different procedures for approving research projects. One school had their own IRB-type process while another allowed approval based on a conversation with an upper-level administrator. Once permission was granted, I moved into data collection (Figure 6). Data collection began with an individual interview, followed by a full-day observation of each teacher in her classroom to gain context for the study. I followed up with the second interview. The group interview was scheduled after all individual interviews and observations were complete at a time and location convenient to most of the participants. Documents were collected and reviewed throughout the data collection period. Field notes began as soon as contacts were made to invite teachers to participate in the study.

Figure 6: Data Collection Sequence



Data Analysis

Miles and Huberman (1994) considered qualitative analysis to occur as "three concurrent flows of activity: data reduction, data display, and conclusion drawing/verification" (p. 10). These three activities should take place both during and after data collection. I collected and analyzed data simultaneously (Bazeley, 2013;

Glense, 2011). This allowed me to focus my thoughts, use the findings to guide future data collection, test ideas and themes with the participants, and refine my theory (Merriam, 2009). It was also consistent with the cyclical nature of hermeneutic phenomenological research (Laverty, 2003). Simultaneous data collection and analysis also helped me to be better organized and prevented me from being overwhelmed by the large amount of data at the end of my study. Merriam believed by waiting to analyze until the end of the data collection period, researchers undermine their own projects due to the sheer volume of data that has been collected.

Level 1 Analysis: Coding

Initial data analysis was the same for the data collected from the individual interviews, observations, group interview, documents, and field notes. First, I read the entire piece of data to build a comprehensive understanding. This aligns with Bazeley's (2013) belief that the first task in analysis is to "build a sense of the whole, to capture the essential nature" of the data (p. 101). As I reread the data, I wrote memos of my personal thoughts, biases, and assumptions in my field notebook. These memos were also recorded in NVivo.

I broke the data into parts through coding. According to Bazeley (2013), coding occurs in two stages. The first stage is identifying and labeling. A list of starter codes (Appendix C) based on the literature was used in the initial coding stage. These starter codes included codes specific to the question as well as the six classroom practices that align with Piaget's constructivist theory as described by Branscombe et al. (2014). Using the six practices as starter codes helped to further align the data analysis section to my conceptual framework of Piaget's constructivist theory. The second stage of

coding is refining and focusing. In this stage, more advanced categories were developed for the codes. I also collapsed the codes that appeared to be similar. I continued to write memos in my field notebook about my coding decisions, creating an audit trail (Lincoln & Guba, 1985). The NVivo software was used to help me sort, shift, and store my codes.

The process of first reading the data as a whole and then breaking it into parts through coding was consistent with hermeneutic phenomenology. The continual iteration between the parts (data) and the whole (evolving understanding of the phenomenon) can be described as the hermeneutic circle (Laverty, 2003). This cyclical process occurred until saturation was reached. By shifting the focus between the parts and whole, a better understanding of the phenomenon was achieved.

Level 2 Analysis: Thematic Analysis

Level 2 data analysis involved looking through the data for themes and patterns. Saldaña (2009) described themes as "outcome(s) of coding, categorization, and analytical reflection" (p. 13). They are the essential structures that make up an experience that are weaved through the data. Consistent with hermeneutic phenomenology, thematic analysis involves the researcher looking at the data as a whole and in parts to better understanding the phenomenon. Van Manen (1990) described three approaches, each of which I used, for revealing themes in a phenomenon. Using the wholistic reading approach, I considered the text as a whole to determine a phrase that captures the fundamental meaning. In the selective reading approach, I read the text several times, looking for any statements or phrases that seem essential to the phenomenon or experience being described. Then I looked at each

sentence, using the detailed reading approach, to determine if it revealed anything about the phenomenon or experience. To ensure that I extracted all possible themes, I used a variety of methods described by Bazeley (2013) including looking for patterns, sorting quotes and expressions, and finding relationships between conditions. NVivo was a valuable tool for searching and sorting, making my work more efficient.

Thematic analysis first took place by looking at the data from individual teachers, or within-cases. It was essential to understand the dynamics of the individual cases before analyzing across cases (Bazeley, 2013). Doing so allowed me to understand the unique attributes before generalizing. It also allowed me to refine concepts and prepare for further analysis, as well as to better understand that contextual factors. Analyzing across cases first might cause the researcher to make generalizations that do not actually represent any of the cases (Bazeley, 2013). It must be noted that the term *case* can refer to an individual who experiences a phenomenon, in this case early childhood educators who use constructivist approaches. As Bazeley noted, the term case goes beyond methodology and should not be confused with the methodology of case study.

Individual and group interviews. To determine the themes in the individual and group interviews, I started by rereading the entire transcript to reflect on the data as a whole. This supported the cyclic nature of hermeneutic phenomenology of always moving between looking at the data as a whole and in individual pieces. I used several strategies suggested by Bazeley (2013) in order to construct themes. When I noticed a pattern or trend that could lead to a theme, I created a memo, noting what data prompted my awareness. This memo was placed in a spreadsheet, along with an assertion for a

theme and data to support the assertion. I color coded the data by participant. Color coding allowed me to see the composite picture. To determine whether the potential theme was supported by other data, I also considered the previously created codes. NVivo helped me electronically sort and categorize codes that could possibly create a theme. Rather than simply ignoring data that did not fit, I attempted to determine possible reasons for discrepancies and contractions. The outliers helped to create an overall picture of the experiences of the educators that came from their own perspective. This process was repeated until the data was exhausted.

Observations and document review. The purpose of the observations and document review were to help build context of the experiences of the participants in the study. This context helped me to further understand the essence of what it means to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability. I reread the notes taken during the observations and about the documents collected. Examples from these were also included in the aforementioned spreadsheet and used as evidence to support the emerging themes.

Field notebook. The field notebook included my personal responses that occurred during the interactions with each participant. It also included insights during the data analysis process. I reread the all the field notes taken on the each participant. Using the comparative process (Bazeley, 2013) allowed me to compare my attitudes and feelings about the interactions with the participant to the findings within each of the codes. It also gave me the opportunity to look at possible biases I held. These biases were noted and carefully considered as I moved forward in my research. The insights were recorded in the field notebook and compared against the emerging themes.

Examples of evidence that supports a theme were documented in the aforementioned spreadsheet. As with the data collected by other methods, divergent views and outliers were used to establish further understanding about the phenomenon.

Level 3 Analysis: Cross-Case Analysis

The next levels of analysis were cross-case analysis and synthesis. The purpose of cross-case analysis was to explore similarities and differences with the hopes of increasing understanding and identifying more patterns and common themes (Bazeley, 2013). By analyzing the data in this way, I was able look at codes I created from different perspectives. After comparing the cases, I synthesized to create a common narrative that helped me better understand the essential relationships across cases. This synthesis was important, as comparative analyses do not typically provide enough information to answer research questions. Bazeley stated "comparative analyses are rarely an end point, rather they are just one tool among many on the analytical journey" (p. 280). Cross-case synthesis helped provide answers to the implications of the similarities and differences found in earlier data analysis. It also brought the level of understanding back to the whole in the hermeneutic circle.

Individual and group interviews. To analyze across cases, I used NVivo to sort the coded material by different categories. Bazeley (2013) described three steps in the process of comparison I used in my analysis. First, I sorted and sifted the data using the query function in NVivo, allowing me to compare multiple categories at the same time. Next, I identified and summarized key points for each group, creating appropriate diagrams, including matrices, webs, and Venn diagrams. Finally, I interpreted and summarized the data, noting any differences and possible reasons for these differences.

Categories for comparison across the cases included years of experience, years of experience in the current grade level, teacher education training, mandates to use prescriptive curriculum, support from administrator, and support from families. I also compared the schools and/or districts in which the educators teach. I kept memos and reflected upon each comparison I my field notebook.

Observations, document analysis, and field notebook. I reread the observations and documents, allowing me to consider the whole before I looked at the parts. An electronic query, using NVivo, was used on the data from the observations and document analyses to help uncover any patterns or themes that did not emerge during previous analysis. It also helped me to identify further connections or relationships between patterns and themes. The field notebook was analyzed in a similar way. I reread my notes, reflecting on the understandings that arose during the data collection period and the previous levels of analysis. These further connections and relationships were used to support the cross-case synthesis. Data that opposed the synthesis was carefully considered.

Ethical Considerations

Ethical conduct is important in all types of research, including qualitative inquiries (Glense, 2011). It was my responsibility as a researcher to ensure this research meets the highest of ethical standards. Upon approval from my committee, my study was submitted to the Institutional Review Board at the University of Oklahoma. I also followed proper procedures for getting permission from the school districts and principals in which the participants work.

Ethical considerations were also given to the participants, as described by Glense (2011). All participants signed informed consent papers. I fully informed each participant about all aspects of the study, giving them the opportunity to ask questions. This allowed them to determine whether or not they wanted to participate. It was made clear that participation was voluntary and participants could remove themselves from the study at any point without consequence. Pseudonyms for the participant, school, and district were used to ensure anonymity. Overall, I treated participants with respect as I sought to co-construct understanding of their experiences as early childhood educators who used constructivist approaches in an era of high-stakes accountability.

Trustworthiness

Quantitative researchers use the constructs of reliability and validity to validate their research. For example, external validity is concerned with the ability to generalize from the research sample to the population (Merriam, 1995). However, external validity not an appropriate term to apply to qualitative research because the purpose of qualitative research is to focus on a specific population rather than to generalize (Glense, 2011). Based on this purpose, a qualitative researcher focuses on trustworthiness to "persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to" (Lincoln & Guba, 1985, p. 290). Lincoln and Guba listed four terms typically used in quantitative research and their qualitative counterparts. The quantitative terms are *internal validity*, *external validity*, *reliability*, and *objectivity*. The qualitative counterparts used to demonstrate the trustworthiness of this case study included *credibility*, *transferability*, *dependability*, and *confirmability*.

Credibility

- I had prolonged engagement with the participants by conducting multiple individual interviews, multiple observations, and a group interview.
- I kept an audit trail (Lincoln & Guba, 1985) by writing memos regarding decisions that I made during data collection and analysis.
- I ensured triangulation by collecting multiple sources of data (individual interviews, observations, group interview, document review, and field notes) to report the experiences of the participants. I also demonstrated triangulation by connecting my research back to the existing body of literature.
- I participated in peer debriefing by meeting weekly with other students in the early childhood doctoral program who hold impartial views of the study. During this time, I we discussed my methodology, transcripts, documents, notes, and analyses. My peers helped me determine areas in need of improvement, find new ways of thinking about my study, and have an overall better understanding of my research.
- I used member checking by having the participants read the individual and group interview transcripts, checking for errors or changes to ensure accuracy before analysis. Member checking occurred shortly after each data collection.

Transferability

- I used detailed descriptions described by Bazeley (2013) as thick, rich descriptions to allow readers to use the data to see similar relationships in their world. These descriptions included contextual information and significance.

Dependability and Confirmability

- I kept an audit trail so others could see how I collected and analyzed the data throughout the study, as evidenced by memos and my field notebook.
- I collected multiple sources of data (individual interviews, observations, group interview, document review, and field notes) to ensure triangulation.
- I used both process notes and reflective notes (Lincoln & Guba, 1985) in my field notebook.

Chapter 4: Findings and Discussion

The purpose of this qualitative research was to examine the experiences of early childhood educators with philosophies that align with constructivist theory who teach in the era of high-stakes accountability. Specifically, the primary research question was: What does it mean to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability? There were three sub-questions for this study:

1) What experiences have these teachers had regarding their teaching practices from parents, colleagues, administrators, and others?
2) What factors have impacted these educators' teaching practices?
3) How have these teachers' instructional decisions been affected by policy initiatives at the school level, district level, and government level?

The findings in this study have been organized into the three major themes and several sub-themes that emerged from data analysis of the individual interviews, group interview, observations, document review, and field notebook. The three major themes were: 1) trust, 2) academic pushdown, and 3) teacher resistance. In the spirit of exploring the lived experiences of the participants, the themes and subthemes have been titled using words and phrases stated by the teachers during data collection.

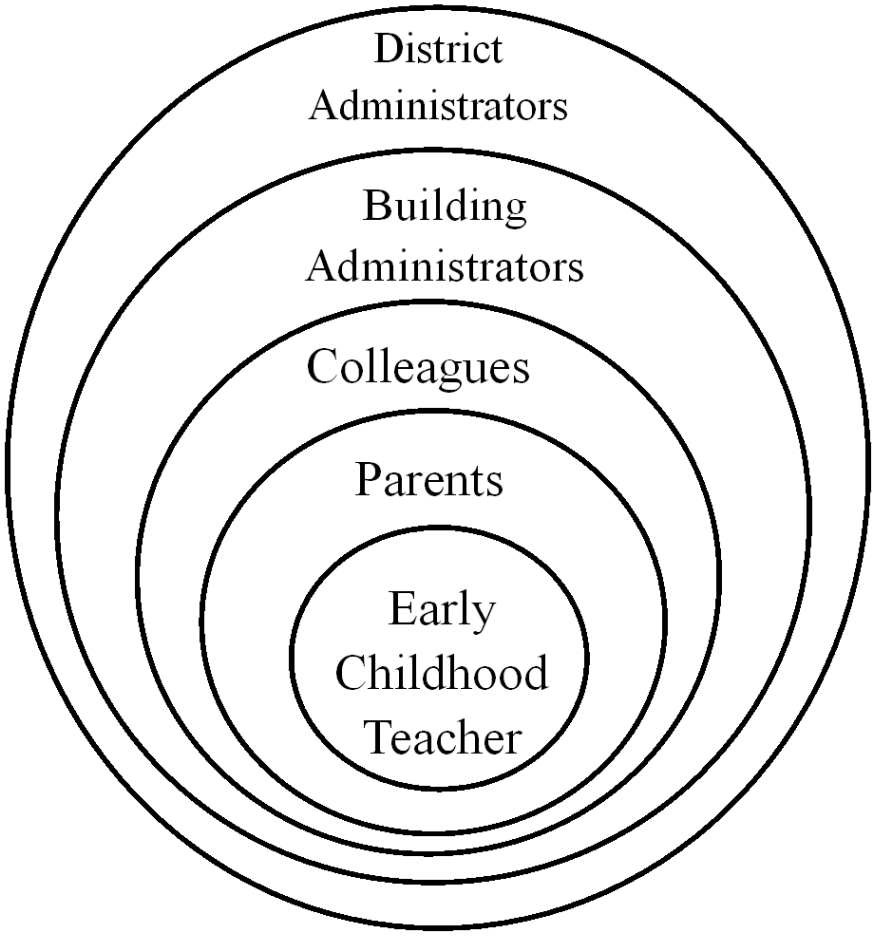
Theme 1: Trust: "It all boils down to trust."

One of the major themes in the study was trust. Trust can be defined as "the belief that those on whom we depend will meet our expectations of them" (Shaw, 1997, p. 21). It is a complex construct that involves a variety of essential components including vulnerability, benevolence, reliability, competency, honesty, and openness

(Hoy, 2012). Trust is not a one-time occurrence. Rather, it is something that builds over time, as individuals who are trusted are expected to consistently behave in a positive manner (Goddard, Tschannen-Moran, & Hoy, 2001). Trust is consistent with the conceptual framework of constructivism as it is a major part of relationships that are constructed between early childhood educators, parents, teachers, and administrators. Goddard, Tschannen-Moran, and Hoy (2001) wrote that the extent of interactions between teachers and parents are affected by the trust that holds the relationships together. As trust is the heart of all relationships, it is not a big jump to assume interactions between teachers and others are also affected by trust.

Trust was mentioned by the participants in almost every individual interview and by several during the group interview. Data analysis of the individual and group interviews revealed the teachers perceived different levels of trust from parents, colleagues, and administrators. When considering the perceptions of trust, a stacked Venn diagram can be conceptualized (Figure 7). At the center of the diagram is the early childhood teacher. Parents, colleagues, and administrators are in the surrounding circles. Because the teachers felt different levels of trust from administrators, they have been separated into two groups: building administrators and district administrators. The closer the groups are to the center circle, the more trust the early childhood teachers felt. In other words, the participants felt the students' parents and other teachers in the school trusted them more than building and district administrators. This theme has been organized by levels of trust into the following sub-themes: 1) parents, 2) colleagues, 3) building administrators, and 4) district administrators.

Figure 7: Levels of Trust



Parents: "After I proved myself, then they trusted me."

For participants who taught kindergarten, trust from the parents seemed to come easily. Most of the parents treated the teachers as professionals and trusted their professional judgment. When describing her use of constructivist approaches, Haley commented, "My families love it!" After her first year of teaching at Henderson, she received several requests for children to be in her classroom because of her unique teaching practices. Overall, she received "a lot of positive feedback from parents." Rachel had the same experience, noting she had not had any issues with parents and felt

"completely supported." These high levels of support were indicators of the trust the teachers felt from the parents.

The first and second grade teachers in the study had to work to build trust with parents. Parent education seemed to help the teachers at Simpson Upper Elementary. For Kathy, the biggest parent concern was about homework. She explained to the parents, "That's your family time. They really work hard at school and I don't want to send them home with a worksheet to do." For those who were persistent about it, she sent home games for the family to play. Nadine took a more proactive approach, inviting them to spend time in the classroom so they could see centers, projects, and other aspects of constructivism in action. The actions of both teachers seemed to alleviate the parents' concerns. The communication teachers used to build initial trust with parents was the first step in creating relationships with authentic trust, or a stable lasting bond (Tschannen-Moran, 2014).

The primary grade teachers at Grant Elementary had to work harder to build trust with parents. When Janet first implemented constructivist approaches in first grade, some of the parents were skeptical. While almost all of the children had been in Reggio-inspired constructivist environments in kindergarten, the parents expected first grade to be traditional. This was the model many parents associated with academic success (Dunn & Kontos, 1997; Stipek, Milburn, Clements, & Daniels, 1992; Hatcher, Nuner, & Paulsel, 2012). Janet described the reactions from the parents her first year at Grant:

> First grade was very traditional with the two teachers that were there. And so, when they [the parents] walk in and I've got the soft music and the lamp lights, the earthy tones, they were like 'huh? And then whenever you start talking to them about, "We're gonna do a lot of projects," I think I had about 50% that

were, “Sweet!” and I had 50% that were, “How is that gonna work? What is my child gonna be learning?” because at Grant the standards are very high.

It was not until the parents saw the children’s midyear standardized test scores that they began to trust, and subsequently, support Janet’s use of constructivist approaches. This year, Janet believed, “it seems like everyone gets it now.” The school was small enough that her reputation preceded her and the parents of the children currently in her class realized her use of constructivist approaches would not negatively affect the standardized test scores.

Trust is a key component in the building of relationships between teachers and parents (Adams, Forsyth, & Mitchell, 2009; Bryk & Scheneider, 2002; Bryk & Scheneider, 2003; Hoy & Tschannen-Moran, 2003; Tschannen-Moran, 2014). Holmes and Rempel (1989) found that when people were engaged in high-trust relationships, they were more likely to interpret behaviors of others in a positive light. This could be the reason the teachers felt that parents supported their constructivist approaches. As teachers’ relationships with the parents grew, they realized the teachers had their children’s best interests at heart. That is, they saw their use of constructivist approaches as an action that was in the best interest of their children.

Colleagues: “We have to figure out how to trust each other.”

The teachers in the study had different experiences with trust and their colleagues. Grant Elementary was notable because a relatively large number of teachers at the school used constructivist approaches. Several of the teachers who worked at the school believed this shared philosophy created support and feelings of trust. For example, Janet stated, “I’m at a very supportive school. Almost everybody there is doing constructivism. You can’t get luckier than that. I feel at Grant that

everybody trusts and supports one another." Rachel agreed, noting, "There are a lot of us here who have the same philosophy and support one another."

However, not all of the participants who worked at Grant felt supported or trusted by their colleagues. During her first year at the school, the second and third grade teachers questioned Barbara's use of constructivist approaches with older children. The teachers constantly watched everything she was doing. Living under such scrutiny was tough for Barbara:

> Last year they [the second and third grade teachers] would make comments when I first started. "I'd really like to come see you teach." Not nice, like, "Hey, I really respect what you do and I want to see it." But more like, "I think you're a joke and I want to see it so I can tell everyone you're a joke."….I invited them to come on, anytime….the first nine weeks was pretty brutal.

Once the other teachers saw her mid-year test scores, they became more open-minded about her use of constructivist approaches. The other second grade teacher even tried some open-ended homework projects. This year, Barbara's students entered third grade and those teachers were pleasantly surprised at just how much her students had learned compared to the other students. It was at this point that "the pressure came off" and the teachers no longer made negative comments or gave her funny looks. They seemed to trust that her teaching approaches worked. In fact, at the time of the study, Barbara felt trusted and supported by these teachers

The participants at the other two schools did not feel trusted by most of their colleagues at the time of the study. Heather shared how the primary grade teachers constantly visited the kindergarten classrooms to ensure they were preparing the children for first grade. She noted, "The first grade teachers are definitely keeping an eye on us and making sure that we are doing their job in a way that they expect." First

grade teachers, Nadine and Kathy, had a similar experience with the second grade teachers at their school. The second grade teachers were concerned what the first graders were really learning when they played all day. Nadine invited the team leader to visit her classroom and look through the students' portfolio. After talking with Nadine, the teacher apologized because she now was able to see how much the children were learning. While one teacher changed her mind about their use of constructivist approaches, Nadine and Kathy both admitted the lack of trust of many colleagues was still present.

Trust with colleagues seemed to be strongly influenced by perception of competence. The teachers who were perceived by their colleagues as competent felt trusted while those whose colleagues did not understand their teaching practices felt less trusted. The relationship between trust and competence is consistent with the literature because competence is a major component of trust (Hoy, 2012). Tschannen-Moran (2014) described how high-stakes accountability has changed teachers trust in one another. Traditionally, teachers have been isolated and had little impact on one another's work. This made it possible for a teacher to think a colleague is not competent as an educator but still a trustworthy member of the school community. However, as accountability has grown and teachers have become expected to be collaborative, competence has become more important in teacher's decisions to trust one another. Teacher competence is based on common understandings about what students should learn and how educators should teach. Bryk and Schneider (2002) and Van Maele and Van Houtte (2011) indicated these understandings are essential in creating trust between teachers.

Building Administrators: "I think it just depends on who's in charge of your school building."

Trust at the building level depended on the school at which the participant worked. Although the principal at Grant expected the teachers to implement district mandates including the literacy block and computerized reading program, the teachers at the school believed, for the most part, she trusted their teaching approaches. For kindergarten teacher Rachel, trust from her principal was demonstrated with the great deal of flexibility she had in her teaching practices. She attributed this to her principal's lack of experience in early childhood. Rachel explained:

> Ellen [the principal] really doesn't know *anything* about kindergarten and she'll tell me that. It's a whole new ballgame for her so she lets us do what we want as long as we're following the curriculum map and progressing on the MAP testing.

This made Rachel feel she could implement constructivist approaches. As it is her principal's second year at the school, she is becoming more knowledgeable about early childhood practices. Rachel noted, "She sees the things at centers, which surprises me sometimes. She'll see the learning that's happening in centers." This is a relief for Rachel because she does not have to fight for using centers, project-based learning, or other teaching practices associated with constructivist approaches.

Other teachers at Grant also felt trusted by the principal. Although they did not have as much flexibility as Rachel did in kindergarten, the primary grade teachers were able to implement constructivist approaches as long as they were meeting the school's target for standardized test scores. This condition did not seem to be an issue for the teachers, as their students typically scored well on the assessments. In fact, Barbara's students had the most growth in the district from pre-test to post-test in both literacy and

math. Although somewhat conflicted about relying on test scores, she felt they helped her principal see her approaches as credible. Barbara shared, "That kind of data shows that what I do works. On the one hand I hate it for the kids more than anything. But on the other hand now no one tells me I don't know how to teach." The credibility Barbara earned from her principal led to increased trust in her teaching approaches.

At Henderson Elementary, Haley did not feel her teaching practices were trusted at the building level. Like Rachel, Haley shared that her building administrators did not have a background in early childhood education. "My principal taught junior high and has a degree in elementary education. The same thing with my assistant principal, he taught junior high art." She believed this gave them a different perspective on what children needed to be successful in school. For example, when she had pecans and nutcrackers at a center in her classroom, Haley's principal made her put them away because he was concerned they were "too dangerous." Unlike Haley, he did not see them as tools to help build fine-motor skills. He only saw the nutcracker as something with which the children could get hurt.

Although Haley tried to explain her rationale for the center, her principal did not listen. It seemed he was unable to see past his own schema of what children should be doing in kindergarten and did not trust Haley's professional judgment as an early childhood educator. Because of the continued differences in their schemas of appropriate practices, Haley started to lose trust in her building administrators as well. She admitted:

> It's hard for me to respect their opinion as well. I feel like they have no idea what they're even talking about. For them to tell me what to do, I just brush it off and don't really take to heart anything they say to me.

The lack of trust by both sides created a sharp divide between Haley and the building administration at Henderson.

Research has also discussed the conceptual differences between teachers and administrators about what children should be doing in the classroom. In the position statement on developmentally appropriate practices, NAEYC (2009) pointed out many administrators lack knowledge about early childhood education. This limited knowledge about children's development and learning has often led to misconceptions about what is and is not wise practices for young children. The position statement continues, noting it is the teacher who has the specialized knowledge about early childhood education and who is with the children every day. Thus, the teacher is in the best position to make decisions about appropriate practices for the specific children in her classroom.

District Administrators: "There is a disconnect between the district and teachers."

Overall, the participants did not believe the district trusted their teaching approaches. During the group and individual interviews, the teachers questioned if the district administration trusted them, why were they mandating so many teaching requirements? Janet reflected on the implementation of the literacy block as an example of the district not trusting the teachers to do what they were supposed to do. She stated, "It's basically what we were all doing anyway…I guess they didn't trust that we were doing it." The teachers were already doing guided reading, read-alouds, phonemic awareness, phonics, and other literacy the block required.

Under the new district mandate, there were specific requirements. Janet explained, "It has a certain format now and there are certain time limits on it…You

have to do the basals, you *have* to put up the literacy boards." Cindy agreed, noting "They have it scripted, exactly how it should roll." It seemed to the teachers the district had automatically assumed they were not competent or they did not trust educators to do their job. Either way, the mandates had been implemented to ensure uniformity and control.

These requirements of the district demonstrated what Tschannen-Moran (2014) referred to as a culture of control. A culture of control is characterized by decision-making and micromanagement coming down from the top. It is not a good fit for the field of education as schools thrive on innovation and flexibility. A culture of control discourages teachers from trying new ideas, experimenting, and learning, leading to lower teacher morale. The antithesis of the culture of control is the culture of professionalism, which values teachers' professional expertise and affords teachers the flexibility to solve problems.

Monitoring by the district was another indication to the teachers that the district did not trust them. Participants in the urban district shared several examples of being monitored both in-person and electronically. Levels of monitoring ranged from "being checked on" to feeling like "Big Brother was watching." The morning of our first interview, Cindy had received a surprise visit from a district administrator during the time scheduled for the literacy block. The administrator had come to the classroom to ensure she was on task according to the district schedule. However, her students were engaged in a different project and this upset the administrator. Cindy described what happened:

> Today, I had them do clay pieces...An administrator [from the district] walked in and was like, "You shouldn't be doing that." And she was upset that I wasn't

> teaching iRead, the computer program. So then I'm being scolded. She's freaking out on me.

Cindy was obviously frustrated because her students were actively engaged and learning. By interrupting her class to reprimand her, the district administrator had shown that Cindy's professional opinion on what was best for her students did not matter. The only thing that mattered was ensuring the students get on the computer so they could stay on schedule.

The teachers also shared how the district monitored them electronically. To ensure the iRead program was being used in accordance to district policies, administrators ran reports that listed how often the students logged in and the number of minutes they stayed on the program. When the report showed students did not log in for at least 20 minutes daily, the noncompliant teacher received an in-person visit from a coach. These coaches, who were actually representatives of the publishing company, were hired to ensure schools were effectively implementing the program. Rachel shared her experience:

> I didn't think it [iRead] was necessarily the most important thing to start at the beginning of the year. About a month in, I was pulled aside and told, "You haven't started iRead yet. None of your kids have logged in. They're all at zero." I answered, "We've been busy." I was told to start doing it now.

The coach did not ask why she had not started the program or offered her any assistance. Rather, she simply told Rachel to start her students on the program because that was the district expectation.

Despite all of this, district administrators took pride in showing off the participants' classrooms at all three schools. This was seen firsthand during the observation in Nadine's class as a district administrator brought seven teachers into her

first grade classroom for a tour. Since the physical environment of Nadine and the other participants were Reggio-inspired, they looked very different than a traditional early childhood classroom. The rooms were carefully arranged to be aesthetically pleasing. They were filled with natural light, mirrors, plants, and natural objects. Small wooden tables and recycled cable spools were used to create workspaces for children. Materials were placed in wicker baskets on open shelves and were easily accessible to the children. In some of the classrooms, a small *atelier*, or art studio, was available for projects. There was a focus on order and beauty in the classroom environment consistent with the Reggio ideas that physical space is a mirror of the people who live within it (Morrison, 2000) and the environment as the third teacher (Gandini, 1997; Strong-Wilson & Ellis, 2007). The district appeared to want these beautiful environments but did not value the philosophy of teaching that went along with them.

The teachers were frustrated the district showed off their classrooms but still did not trust their professional judgment in teaching. Barbara noted, "They [district administrators] love the environment but they're always asking, 'Well what are the students learning?' It's like they don't trust us enough to know what we are doing." Haley had similar concerns after her new superintendent visited her classroom. She noted "he loved it so much that he brought in the assistant superintendent to see it." Despite this, the district still pushed her to implement the prescribed curriculum and Haley could not understand why. "It's a bit contradictory. They like what I'm doing and want me to do it. But at the same time, they don't trust me enough to teach without the [prescribed] curriculum."

Summary

Trust is not a one-way process; rather it is reciprocal. It is a significant part of the educational climate and cannot be disconnected from the experiences of early childhood educators. In fact, Meier (2002) argued teacher trust was the glue that keeps learning communities together. Trust is a necessary part of the dialogue between teachers and others essential to children's education. Without this trust, or "faith in people", the dialogue "is a farce which inevitably degenerates into paternalistic manipulation" (Freire, 1970/2000, p.91). In working with parents, other teachers, building administrators, and administrators at the district level, trust allows for strong working relationships. When teachers, parents, and administrators trust one another, it adds to the likelihood of a climate of success (Goddard, Tschannen-Moran, & Hoy, 2001; Van Maele, Van Houtte, & Forsyth, 2014). In contrast, when there is not trust, the result is a disengagement from the educational process that can come at the expense of the students. One such example of lack of trust is the second theme, academic pushdown.

Theme 2: Academic Pushdown: "Why does every child have to be a rock star?"

The second major theme participants discussed during the individual and group interviews was academic pushdown. Evidence of academic pushdown was also observed in the classrooms. Academic pushdown, also referred to in the literature as pushed-down curriculum, occurs when the expectations and curriculum for older students are transferred to younger students (Copple & Bredekamp, 2009; Katz, 1999). Academic pushdown is an example of how the current educational system continues to have a factory model view of education. First described in the early 1900's by Bobbitt,

this view is based on the premise that all children can and will learn, on demand, the same things at the same time (Au, 2011; Brooks & Brooks, 1999; Cullen & Hill, 2013). The one-size-fits-all factory model view attempts to standardize education through pre-packaged curriculum with the aim of increasing children's test scores. The goals of this model include uniformity and efficiency. Au (2011) described how the factory model is demonstrated in modern public education:

> Students are the raw material to be produced like commodities according to specified standards and objectives. Teachers are the workers who employ the most efficient methods to get the students to meet pre-determined standards and objectives. Administrators are the managers who determine and dictate to teachers the most efficient methods in the production process. The school is the factory assembly line where this process takes place. (p. 27)

Interestingly, the participants in the present study realized the district shared this view of education. Everything had been scripted for the teachers and timed out to the very minute. The focus was on the end product, the standardized test scores. First grade teacher, Cindy, was fearful as she admitted, "I'm really scared on a district level…I really feel like we're a bunch of factory workers."

This section shares the participants' experiences with academic pushdown. Although they did not always use the term, the seven teachers shared how they were pressured by colleagues, principals, district administrators, and policy makers to push down higher levels of curriculum onto their students. The subthemes of academic pushdown included 1) fitting it all in, 2) the push to read, 3) the literacy block, and 4) standardized testing.

Fitting It All In: "When I take time for that, I'm behind the eight ball."

A problem with academic pushdown is that once the curriculum came to the earliest grades, there was nowhere else to push it down to and the amount of required

curriculum built up. That is, what used to be taught I n first grade is now being taught in kindergarten. This notion has been confirmed by multiple researchers (Bassok & Rorem, 2014; Miller & Almon, 2009). Trying to ensure that each standard was taught caused some of the teachers in the present study a great deal of stress, as indicated by their use of the terms "fitting it all in" and "lack of time." First grade teacher, Cindy, described the pressure she felt as "being behind the eight ball." The phrase referred to a pool game in which the cue ball was behind the eight ball and the player had no shot of winning. While they did not seem to feel as distressed, several of the teachers commented on how much they were expected to teach in order to meet the standards required for their grade level. This pressure came from the state standards as well as the district pacing calendar. Janet noted that first grade was "such a huge year in reading, phonics, and writing. Even in math, it's a huge year." Bassok and Rorem (2014) confirmed that from 1999 to 2006, the expectations for learning has increased in the early childhood grades. With the implementation of policies such as NCLB and Race to the Top, it is reasonable to assume the expectations have increased even more from 2006 to the present.

The concern with fitting everything in seemed especially prevalent during the participants' first year teaching in a new grade level. Several of the teachers shared stories about disequilibrium they felt when they moved from one grade level to another. Some equated it to their first year of teaching. Janet described her movement from pre-kindergarten to first grade:

> It's a whole different world. You have your transitions down. You know what you want as far as routines go. But as far as figuring out how to balance all the different standards and different curriculum that's pushed on you, that's tough.

Although the teachers had more prior knowledge and experience than they had as first year teachers, switching grade levels was quite challenging. For Cindy, the change in grade level was like starting over. After 17 years of teaching young children in pre-kindergarten and kindergarten, this was Cindy's first year teaching first grade. She constantly felt like she was out of time to fit everything into the day. When asked about her schedule, Cindy commented:

> I literally do not hit everything [the district] is asking me to do by the end of the morning for literacy. And then we have to move onto math… For us to hit everything we have to, we don't have the time. I tried to integrate it but there's still no time.

At the end of the data collection period, Cindy had not yet found the balance she felt was needed in order to get everything done.

The Push to Read: "If they're in the process, isn't that what counts?"

Reading was discussed as an area in which participants felt the effect of academic pushdown. The teachers often had ideas about reading that were different than the district in which they worked. In the urban district, for example, the expectation was children would be fluent readers by the end of first grade. However, the first grade teachers believed as long as children were moving through the reading process, they were successful. Unfortunately, children who did not score at certain levels fast enough on a computerized standardized test were labeled at-risk by the district. Cindy was frustrated by the policy, especially considering these assessments were given so early in the school year. She stated, "If a child reading on beginning grade level is at-risk, then that's messed up!" Even though this was behind where the district wanted the children to be, there were nearly six months of school left and, according the Cindy, "growth could happen overnight."

The expectation of the urban district for first graders to be fluent readers affected teachers in other grade levels. To ensure the children reached the expectation set by the district, kindergarten teachers felt pressured to have their students reading emergent texts by the end of kindergarten. The originating source of this pressure was unclear. Kindergarten teacher, Rachel, did not know whether it came from the district level or her building administrator. However, she felt it, commenting how difficult it was because not every child came in at the same level. In fact, about half of her students had not been in a formal preschool or pre-kindergarten program before entering her class. Some came in and "did not even know one letter." While not impossible, it made reaching the district expectations on reading very challenging.

As the children moved up in the grade levels, the consequences for not meeting the reading expectations set by the district became more severe. In the earliest years, the children were labeled at-risk. Depending on the school, children were given additional instruction in reading from a reading specialist, teaching assistant, paid tutor, or volunteer. Some were considered for retention, while others were tested for special education. Barbara noted that some students arrived in her second grade classroom already on Individual Education Plans (IEPs) for special education because they did not read fluently by the end of first grade. Labeling the children so early was concerning to her because of the stigma that comes with being in special education, "That's wrong. I mean it really is. It's wrong because of their self-confidence….There's so many things that go along with that IEP."

A few of the participants had personal stories about learning to read later in the primary years. Barbara shared her own experience. "I didn't even read until I was in

third grade and then by the sixth grade, I was reading on a college level." Cindy's son also did not learn to read until the third grade. By the current standards of the urban district, they would have been labeled at-risk in kindergarten or first grade. By the time they were in third grade, Cindy's son, as well as Barbara, would have likely been retained or tested for special education. Fortunately, they were both in environments that did not focus on one aspect of cognitive development to make decisions. It is important to note that despite the fact Cindy's son and Barbara learned to read later in the primary grades, as adults, they are both avid readers.

The Literacy Block: "Doing reading for 90 minutes straight is so ridiculous."

In order to ensure the children were at grade level for reading, both of the districts mandated an intensive literacy block for all children starting in kindergarten. The purpose was to ensure children across the district were engaged in a sequence of literacy activities during an uninterrupted block of time. This block ranged from 90 minutes to over two hours per day, depending on the district and the grade level. Students were expected to move through literacy activities, including shared reading, literacy centers, small group instruction, word work, writing, and a read aloud, in short blocks of time pre-determined by the district.

A major concern the participants had about the literacy block was integration of curriculum was not encouraged. The mandate from both districts was that the scheduled block of time was to focus only on literacy; the teachers were not supposed to integrate other subjects. Barbara stated, "I don't understand how [the district administrators] don't understand that the integration of subjects actually makes more of

a quality experience for children." The policy made no sense to the teachers, therefore many did not follow the mandate and integrated curriculum during the literacy block.

It was not only the teachers who believed the mandate was nonsensical; it was also incongruent with early childhood professional standards. The 2009 NAEYC position statement on developmentally appropriate practices stated teachers should plan curriculum that integrates the developmental domains and subject areas. Tomlinson (2009) referred to large blocks of scheduled time for a single subject as a "misguided, adult-imposed scheme" that conflicts with how young children learn. Rather than categorizing learning by subject area, primary grade children naturally integrate across disciplines. While it can be productive for teachers to spend some time on one subject area to study a concept or skill in depth, learning should take place within the framework of an integrated curriculum.

Another problem was the amount of time per day the children spent in the literacy block. At Henderson, Haley was expected to spend 90 minutes "doing some kind of direct, teacher-instructed reading lesson" with her kindergarten students. The requirement was even longer in the urban district. In first grade, two hours, nearly 30%, of the day was expected to be spent in the literacy block, which took away from other curriculum areas. Many of the teachers were concerned about math. Haley said, "I think that the math gets swept under the rug because of this. My kids don't know near the math standards that I feel like they should because I'm spending that 90 minute block on nothing but reading." Science and social studies had an even worse fate. Janet described the subjects as "an afterthought" to the district. This is consistent with McMurrer's (2008) investigation on instructional time in elementary classrooms.

Increased time in tested subjects, including literacy, led to substantial cuts in non-tested subjects including science and social studies.

Despite the districts' mandates to focus on literacy during the block, several of the teachers still integrated other subjects during this time. In Haley's kindergarten class, children were observed engaging in a variety of play-based centers, including dramatic play and blocks, during the scheduled literacy block. While she integrated literacy into these centers, such as adding books, paper, and pencils, the subject was not the focus of the center. First grade teachers, Kathy and Nadine, used the time for free choice centers that included, but did not focus on, literacy. When asked about the literacy block after her observation, Kathy stated:

> I don't do [the literacy block] like the district says to do it…I still get everything in. It's just not in the hour block that they want it with a break and then a 30 minute group…I cover all of my bases of what they're supposed to know and what they're supposed to be doing. I just don't do it exactly how they want me to do it.

In this way, Kathy complied with the district mandate but did it in such a way that was most effective for the students with whom she worked.

One component of the literacy block that caused a great deal of frustration for the six participants who worked in the urban district was iRead. iRead is a computer software program that provides targeted, explicit literacy instruction for young children. It is described by the publisher as a "digital foundational reading program designed to close the achievement gap early, and place ALL K-2 children on a predictable path to reading proficiency by Grade 3" (Scholastic, n.d.). All students in the district who were in kindergarten to second grade were expected to use the program for 20 minutes each day.

The teachers had several issues with the iRead program. Many classrooms did not have adequate technology to implement the program. While the district spent a great deal of money to purchase the software and related supports, they did not invest in the infrastructure necessary to make the program work. During the classroom observations, several broken computers were noticed. When the teachers were questioned about computers, several rolled their eyes. The teachers were expected to troubleshoot computers and become technicians when the computers were frozen or not working. This all took time away from their teaching. Some of the teachers noted that in the first year iRead was implemented into the district, they were allowed to take their entire class to the computer lab for 20 minutes so that all children could complete their program at the same time. For reasons unknown to the participants, they were no longer allowed to use the computer lab for iRead. Rather, a small group of children was called to take their turn on the computer program every 20 minutes.

In kindergarten, management of the program was difficult because the children needed constant assistance. Rachel spent a great deal of time helping students log into the program and use the mouse. She complained, "It's just so time consuming. It's taking away from everything else. I have to be over here monitoring, pulling kids and making sure that they are on task and they're doing it." This was time Rachel believed would have been better spent working with children in small groups. Although the children in first and second grade quickly learned how to log themselves in and navigate the system, the teachers still had to ensure all of their students cycled through the program.

Several teachers commented their students hated the iRead program. During classroom observations, many children argued or complained when they had to use it. Rachel confirmed that only three or four of her kindergarten students liked the program. She explained, "The rest of them hate it because they don't want to miss out on centers or whatever else we're doing." Since the children were expected to rotate through the program every 20 minutes, children were constantly being interrupted and forced to leave what they were doing to spend their time on the computer. The teachers were not supposed to send children to the computers during whole group learning times so most of these interruptions took place during time set aside for learning centers or projects. These were both times when the children were actively engaged in meaningful learning. Such interruptions are inconsistent with the literature (Greenwald, 1999, Hedges, 2011, Nimmo, 1998). Interrupting children can interfere with their "momentum, interest, and inner working of thought" (Edwards, 2002, n.p.).

Although the preceding issues could be solved by taking the entire class to the computer lab, the teachers also had philosophical concerns with the iRead program. By being mandated to use the iRead program with every child daily, teachers were being forced to teach in ways that did not necessarily match their view of developmentally appropriate practices. For example, Cindy and Janet referred to the program as an "electronic worksheet" because of the drill and skill aspect of the program. iRead was considered to be word work by the district. Word work includes activities that allow children to learn about how the alphabet works (Short, Kane, & Peeling, 2000). Activities typically include manipulating plastic letters or letter tiles to sort and match letters, make words, or play word games. Janet believed the children were missing out

by doing their word work on the computer. They did not get the kinesthetics of physically moving the letters or tiles. She explained "They need to feel the shape of the letters and the curve, or lack thereof. They need to physically place the letters together to create words and then combine words to make sentences. That's what word work is."

Early childhood researchers have considered worksheets, both printed and electronic, to be inappropriate for young children (Copple & Bredekamp, 2009; Jung & Conderman, 2014; McGregor, 2010; Ransom & Manning, 2013). Kamii (1985) noted, "Children who can do these worksheets already know how to do them... those who cannot do them, on the other hands, will not learn… by filling out a worksheet" (p. 5). Contemporary researchers agree. For example, Ransom and Manning (2013) stated, worksheets were "counterproductive to for student learning and is fundamentally inconsistent with constructivist philosophy" (p. 188). The joint position statement of the NAEYC and Fred Rogers Center for Early Learning and Children's Media (2012) admonished electronic worksheets, writing "technology should not be used for activities that are not educationally sound, not developmentally appropriate, or not effective" (p. 4). They encourage rote, mechanical skills rather than true understanding. The time spent on them takes away from time that could be spent in play-based activities using authentic materials.

While the iRead program was touted on the website as having "a personal learning progression" (Scholastic, n.d.), the teachers shared a different view. Cindy described how the system had no capacity to monitor children's mastery of a skill. "I had multiple students who have CVC [consonant vowel consonant] word mastery but

the system kept making them take these [lessons] over and over again. This leads to complete boredom and resistance to the program." When children did not click through the pages fast enough, they had to repeat lessons. Janet explained:

> I have a student who reads on a fifth grade level and she was doing the same work as one of my [students] who is at a pre-k level because of the way the program works. The students become completely bored and don't look at the screen half of the time. Therefore, they are not fast tracking through because they don't understand that if you click quickly then it fast tracks and pushes you onto the next level.

Since the teachers were unable to change the students' levels in the program, the children were often stuck doing potentially mindless work for twenty minutes a day. In fact, Rachel shared what one of her kindergarten students told a guest while giving a classroom tour: "This is iRead. It's a new technology that is supposed to teach you to read but it really just wastes your time for 20 minutes." The program took away from time children could be engaged in authentic, meaningful activities. This was frustrating to some participants, including Barbara who stated, "iRead is just a system…It's not that great. I think my degree far surpasses a computer program."

Standardized Testing: "By third grade, they're tested so many times."

A part of the academic pushdown faced by the participants was standardized testing. When data collection began, there was the expectation that teachers would be pressured to prepare their students for assessments that would be given in third grade. In fact, the participants described some pressure and confirmed the third grade teachers were required to give state curriculum standardized assessments. In addition, third grade teachers in the urban district were required to administer the Measures of Academic Progress (MAP) to their students. The surprising finding was that, to prepare the students for the MAP, children in kindergarten to second grade were given the MAP

for Primary Grades (MPG) assessment three times a year. MAP and MPG were computer-based, standardized assessments utilized for benchmark testing. These adaptive tests were designed to increase in difficulty as the children answered the questions correctly.

The six participants who taught in the urban district had several concerns about the MPG assessment. The purpose of the assessment was to "target a student's academic performance" (Northwest Evaluation Association, 2011). However, the teachers did not believe the children's scores on the assessment indicated their true academic achievement. Several teachers shared stories of inconsistencies. Janet noted, "I've got kids in my class who in person, on paper, and in discussion are very capable of some of the highest levels in these areas [reading and math] but on the test they're not." First grade teacher Kathy corroborated, stating, "One of my highest readers scored the lowest and the very lowest reader scored in the top five highest." These incongruities made it difficult for the teachers to trust the assessment.

Another concern was with the adaptive nature of the assessment. Some participants believed it was designed to make the children fail. Nadine explained:

> It's a test designed to go with the children and keep them at their ZPD [zone of proximal development] or to find their ZPD and then challenge that….If I were to sit down and take the test, it would eventually hit questions that I cannot answer.

She did not have an issue with putting the children in their ZPD. In fact, she believed that was one of her roles as a teacher. However, she did not believe the ZPD should be challenged via a computerized test. "A test is for assessment…but your ZPD is for growth and knowledge." According to Nadine, the problem with the adaptive test was that for children in the pre-operational stage of development, "there's no concrete way

for them to understand that they're not failing the test every single time because it continuously gets harder." This made the test especially harmful for children in early childhood. Unfortunately, the teachers saw firsthand the stress the children experienced. Nadine and Kathy both shared stories of children who became very upset, angry, or simply shut down.

The computerized assessment claimed to put the children in their ZPD (Northwest Evaluation Association, 2015). The zone of proximal development was defined by Vygotsky (1978) as "the distance between the actual developmental level 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" (p. 86). While computer programs can be mediators and actively scaffold children's learning, the fact that the MPG pushed children to the point of frustration and failure, demonstrated children were not being kept in their ZPD. Being outside of the ZPD likely caused the children's stress-related behaviors observed by Nadine and the other teachers.

The children faced consequences for not scoring well on the MPG assessment. The state in which the study took place already had a law that required children to read at grade level by the end of third grade in order to be promoted. At the time of the study, reading proficiency was determined by the children's scores on their standardized assessment. Kathy noted that the scores of the MPG allowed teachers to start a paper trail on the students in kindergarten. "If they continue on this path until the third grade, they're going to be retained." In some schools retention took place in earlier grades

based on the child's MPG score. Janet explained, "If they are not up to this level by the end of first grade, it can affect whether they move onto second grade."

Summary

Academic pushdown counters developmentally appropriate practices. It diminishes the role play-based learning in the early childhood classroom, replacing open-ended materials with prescriptive curriculum that emphasizes test preparation (Gallant, 2009; Miller & Almon, 2009; Nicolopoulou, 2010). Academic pushdown standardizes the curriculum, ignoring the individual needs of the children in the classroom. It also takes away decision making and power from the experts in the field, the early childhood educators. Unfortunately, policy makers and administrators have continued to create mandates encouraging academic pushdown. These mandates have marginalized early childhood in the name of NCLB, Race to the Top, and other accountability measures (Adler & Iorio, 2012). While the teachers in the study felt pressured from academic pushdown, they pushed back through the implementation of constructivist approaches and other forms of resistance. In this way the participants were able to be true to their professional beliefs and to early childhood professional standards.

Theme 3: Teacher Resistance: "I'm here for the kids, so fire me."

One of the characteristics of high-stakes accountability is the reliance on external mechanisms, such as standards, curriculum, and assessments, to transform instructional practices (Diamond & Spillane, 2004). These external mechanisms are used to hold teachers, schools, and districts more responsible for student performance. Throughout the data collection period, the seven participants shared experiences in

which they were expected to implement teaching practices that conflicted with constructivist theory. This pressure, described by first grade teacher, Cindy, as "imposed constraints" hindered the teachers teaching practices. Despite the hindrances, the teachers often resisted this pressure.

All of the participants shared examples of how they resisted high-stakes accountability. Teacher resistance, the third theme of the study, took place in a variety of ways. Some teachers did not follow the district mandated literacy block while others integrated the curriculum areas. One teacher was the only educator in her school to implement child-initiated projects while two teachers took a stance and refused to give the district mandated standardized test. The four subthemes of teacher resistance included: 1) teacher autonomy, 2) advocating for children, 3) pushing back through projects, and 4) leaving public school.

Teacher Autonomy: "You'd better not just conform because then you're being a script reader."

The sub-theme of teacher autonomy emerged from the stories shared by the participants. Often, the participants made autonomous decisions in order to provide appropriate environments for their students. This study used the definition of autonomy as conceptualized by Kamii (1984; 2012): the ability to think for oneself independent of reward or punishment. In the context of teaching practices during an era of high-stakes accountability, teachers who acted autonomously made decisions based on their knowledge about child development theory and how children learn. While they critically considered the viewpoints of others when making decisions about their instructional practices, the teachers ultimately made decisions based on what was best

for the children in their classroom. This behavior contrasted the behavior of teachers who followed all of the mandates and policies ordered from higher levels without question. As with other aspects of constructivist approaches, autonomy and heteronomy are on a continuum. No one teacher is either autonomous or heteronomous, rather their behaviors fall somewhere on the continuum.

The participants in this study found themselves at different points on the continuum, as some shared more examples of autonomous behaviors than others. However, every teacher demonstrated some level of autonomy in their instructional practices. For example, many did not follow the prescribed curriculum and some refused to implement the balanced literacy block as mandated by the district. Others questioned policies that did not match their conception of developmentally appropriate practices. Overall, the educators engaged in autonomous behaviors in order to provide appropriate educational environments for their students.

Teacher autonomy emerged during the first interview and continued to appear in almost every individual and group interview during the data collection period. The participants made connections between student and teacher autonomy. For example, when Nadine was asked how she encouraged autonomy in the classroom, she answered, "I try to always be autonomous. I think the best way people learn is by model." She proceeded to explain ways that she was autonomous in her teaching, including not participating in school-wide activities that manipulated children through rewards and punishments. The connection between teacher and student autonomy is also supported by the literature (Lamb & Reinders, 2005; Little, 2000). In fact, Ramos (2006) pointed

out “it is only natural to think that autonomous behaviors promoted in students have to be present in ourselves” (p. 187).

The very act of implementing constructivist approaches during an era of high-stakes accountability was an example of teacher autonomy. The participants shared a variety of factors that contributed to their decisions to facilitate student learning through the use of constructivist approaches. A major contributing factor was the teachers’ undergraduate program. Of the seven participants, five attended the same early childhood education program at a local university. The program was grounded in constructivist theory and based on the philosophy that individuals learn by constructing their own knowledge. Jennifer believed the program had a “major influence” on her current teaching practices and attributed it to her success as a constructivist educator. Nikki agreed, stating her experience at the university helped to inform her own instruction. She believed it to be especially beneficial in learning how to evaluate and assess her students.

One of the unique features of this program was a cohort system. Students entered the early childhood program during the fall of their junior year. Over the next two years, they enrolled in the same classes as the other members of their cohort. As a result, students completed the program as a unit. Because they were taking classes with the same group of people, they built strong relationships and support systems. Even after they graduated from the program and started teaching full-time, the participants still relied on their cohort members. For example, when Betty was not happy with her teaching partner at the community-based preschool program where she worked, she called one of her former cohort members. Betty told her, “You need to come work over

here and be my partner. Let's take this to a whole new level." The cohort member accepted a position at the school and she and Betty were able to implement constructivist approaches into their shared classroom. Betty attributed their success to the strong relationship the two built in their undergraduate program.

A growing body of research has identified several benefits gained by implementing a cohort model in teacher preparation programs (Beachboard, Beachboard, Li, & Adkison, 2011; Darling-Hammond, 2006; Seifert, & Mandzuk, 2006; Whitebook, Gomby, Bellm, Sakai, & Kipnis, 2009). Beck and Kosnick (2001) studied students in an early childhood cohort system and found increases in students' professional growth, including greater participation, risk-taking, group orientation, inclusiveness, emotional and social development, and increased confidence and self-esteem. Danielewicz (2014) noted a cohort model can contribute to a strong group identity among students. Wenger and Dinsmore (2005) described how the implementation of cohort systems can build trust and cohesiveness among the students. This is essential because in early childhood teacher education programs, undergraduate students often have conversations about tough topics. The trust built through a cohort system can help the pre-service teachers feel safe to share ideas and take the risks necessary for constructivist-based learning.

The participants also cited their undergraduate field experiences and internships as contributing to their implementation of constructivist approaches. Field experiences and internships offer pre-service teachers the opportunity to apply the theories they are learning during their coursework. Students who attended the university with a cohort system engaged in one field experience for each of the five semesters of the program.

They were strategically placed with educators who taught using approaches consistent with what the pre-service teachers were learning in their early childhood education program. Barbara was "never in a traditional classroom" during her time at the university; instead all of her placements were with teachers who used constructivist approaches. She attributed the time spent with these teachers, specifically those who were Reggio-inspired, to her ability to provide these experiences for her own students. Janet agreed, commenting her placements allowed her to "experience constructivism in action", helping her to make connections between theory and practice. Haley shared how they prevented her from going with the status quo:

> My field experiences were opportunities to see first-hand the effectiveness of constructivism. Without seeing it, resorting to behaviorism would have been my default reaction because that's all I grew up with. Practicing constructivism as a college student made me feel confident enough to do these practices in my own classroom.

In this way, the field experiences and internships contributed to the teachers' decisions to be autonomous and implement constructivist approaches.

A notable example of autonomous behavior in the study was of kindergarten teacher, Haley. As the only teacher in the school to implement projects based on the children's interests, she faced criticism and, even bullying, on a regular basis. Teachers rolled their eyes, made negative comments, and teased Haley about the way she taught. After Haley and her intern set up a display in the hallway that documented a construction project, the teachers complained and these complaints were validated by the school administration:

> Teachers would walk by and just make these comments like, "Oh my god! Can you believe they did that with five-year-olds? Someone's going to get hurt!" And they [the administration] actually made me move my display out because

> on the display I had some nails, hammers, and things like that and they didn't think it was safe for kids just walking by.

Despite the negative reactions from the other teachers and the subsequent consequences from her administrator, Haley has continued to implement projects based on the children's interests. She believed that cooking, sewing, playing in the mud, and other activities the teachers in her building did not approve of were beneficial to her students. She felt these benefits outweighed any negative consequences that might come her way. In this way, she has demonstrated a great deal of autonomy in her teaching practices.

Most of the participants believed that, in general, teachers had less autonomy now than they had in the past. Nadine had an aunt who was a longtime public school teacher and used her experiences as the basis of her opinion on the change in teacher autonomy:

> There was a time when teachers were more respected and more valued. You went to teachers to teach you. That's how you learned about things that you would have no other exposure to if there wasn't a real life scenario. Teachers were respected as professionals, as smart people, as thinkers.

Nadine believed the autonomy had gradually been taken away over the years due to legislation increasing the mandates for public education. This perception is consistent with the literature, as there has been a decline in teacher autonomy since at least the 1970's (Anderson, 1987; Gonzalez, Moll & Amanti, 2005; Short & Rinehart, 1992; Skaalvik & Skaalvik, 2008). Reasons for the decline include increases in mandates from the state and federal government (Au, 2011; Barrett, 2009; Crow, 2005; Shapiro & Koren, 2012; Webb, 2002).

Some participants felt that teacher autonomy had decreased even in the years since they started teaching. When Haley accepted a position at Henderson three years ago, she was able to teach how she wanted. She described her job interview:

> I asked them, "What kind of curriculum do you use in kindergarten? Is there anything required for me to use?" And they said, "You went to college, didn't you?" And I said, "Yes, I did." That's how I knew this is where I'm going to be because they're going to trust me to teach how I teach.

Unfortunately, the same administrator who hired her was now pushing her to use the prescribed curriculum. Haley believed it was because the school had earned a low letter grade on the state report card:

> We got a D+ and so our administration thinks that by making teachers use the required curriculum, it will bring our grade up. And so this year they've been saying, "Where's your [prescribed] curriculum at?" I said, "Well it's in the attic of my house. I guess I need to get *that* down now."

While she understood her principal was under a great deal of stress from the district, she felt like the pressure for her school to achieve was transferred to her as a classroom teacher.

There seemed to be a decrease in teacher autonomy as the grade level increased. Many of the teachers commented on the amount of autonomy that teachers in the earliest grades seemed to have. Barbara stated, "pre-k and kindergarten do pretty much their own thing." Rachel agreed, believing that it was easy to do what she wanted in kindergarten. She felt it was more difficult for teachers in other grades:

> I think the closer they get to third grade, the stricter it is. They're watching you. They want you focused on specific things. They don't want you playing. They don't want you doing any kind of exploration. It's just very business-like by third grade.

Third grade was mentioned by several teachers because that was the first year the student's took statewide standardized assessments. Although the urban district

mandated computerized testing beginning in kindergarten, third grade was seen as a big year for testing. The teachers believed the closer the children got to taking the third grade state test, the more restrictive the policies were on the teachers.

The participants made connections between autonomy and power. Most were concerned about the lack of power they had as educators in public schools. During the group interview the teachers agreed the power had been taken away from teachers and given to outside decision makers who did not necessarily understand early childhood education. Kathy declared, "We need to have teachers in the conversation." Nadine agreed, voicing, "We want to be valued as professionals." Several of the teachers had suggestions for increasing power and autonomy, including the creation of teacher panels and use of teacher-vetted research. Barbara compared teaching to other professions:

> For me the change has to happen so that teachers have a profession just like medical doctors and lawyers and pharmacists. We need to dictate to our policy makers what is acceptable and what is not, just like the medical board. That's the way it should be. Until that happens, we're going to be right where we are.

Janet summarized, stating, "We need to have the control back in our hands." The teachers agreed that trusting teachers and acknowledging them as experts in the field would lead to more autonomy, thus increasing teacher morale.

The connection between teacher autonomy and power is not new. In the field of education, this power includes administrators at the building and district levels as well as government officials. Often the decision makers who control the money perceive their views as more valuable than that of educators (Barksdale-Ladd & Thomas, 2000; Green & Dixon, 1996; Ingersoll, 2009). Unfortunately, this has created a system in which teachers are forced to deal with mandates created by outside decision makers.

This lack of autonomy was referred to by Biesta (2012) as the disappearance of the teacher.

Advocating for Children: "We can take what people are shoving down our throats or we can fight!"

Another form of teacher resistance closely related to autonomy was advocacy. In this study, advocacy was defined as creating change by "standing up for children and their needs" (Goffin & Lombardi, 1988, p. 1). Initially, there was a concern about labeling the participants as advocates. After all, research has demonstrated that teachers often do not consider themselves to be advocates for several reasons, including fear of personal and professional risk (Levin, 1998; Jensen, 2004; Peters & Reid, 2009) and lack of disposition (Castle & Ethridge, 2003). This concern was for naught, as the findings demonstrated that every teacher considered herself to be an advocate. Janet believed that by virtue of being "on the front lines… and standing up for kids," she and her colleagues were educational advocates. Barbara agreed, commenting that "advocacy should not scare anyone because it's part of the job." While all of the teachers seemed to share Janet's and Barbara's sentiments, their advocacy efforts were demonstrated in different ways.

Robinson and Stark (2005) described two major types of advocacy in education: 1) personal advocacy and 2) public policy advocacy. Personal advocacy focuses on sharing information with individuals or groups. It often involves teachers taking advantage of opportunities to use their expertise to speak out for children and developmentally appropriate practices (Goffin & Lombardi, 1988). In this study, all of the teachers shared examples of personal advocacy. To help parents understand why

she did not use worksheets in her classroom, Haley sent home parent-friendly articles about the importance of play with her newsletters. Rachel sent daily emails with photos and explanations of what the children were learning at school. This helped to alleviate parent apprehension about their children's education. She noted, "They're not concerned about what we're learning at school [because] they know what we're doing and that we're learning." Cindy shared information about developmentally appropriate practices with teachers around the world through her education blog.

The second type of advocacy was public policy advocacy. This type of advocacy is what typically comes to mind when one thinks about advocacy. It is directed at making changes to policies and procedures at the legislative or administrative levels (Robinson & Stark, 2005; Goffin & Lombardi, 1988). The focus is on creating change for a larger number of children. Public policy advocacy efforts are often seen by more people than personal advocacy. For Nadine, opting her own children out of standardized testing led to public policy advocacy at a larger level. She shared her experience:

> Five years ago, I started opting out my own kids from testing. And through that process I just had to learn all about it and read about it….I joined an organization called United Opt Out, a national opt out organization. I've been working with them. This is my third year with them…I just started working with grassroots organizations to try to… eliminate some of the high-stakes testing. And I just speak a lot and find parents to get on board.

Nadine extended her public policy advocacy efforts by offering information and help to parents throughout the state who wanted to opt-out their children from high-stakes accountability. When asked about how she resists high-stakes accountability, she asked a question of her own: "How can you not?"

The other participants in the study were aware of Nadine's public policy advocacy efforts and admired her stance. Cindy shared, "I love that Nadine's done that. I think it's just amazing and I wish I could be her." However, the teachers shared multiple reasons why they did not extend their own advocacy efforts. Most of these reasons were related to fear. The teachers at Grant Elementary believed they already had autonomy to teach in ways they believed to be appropriate. While there were things about the curriculum they would like to change, many feared that outspoken advocacy would affect their ability to freely implement constructivist approaches. Rachel stated, "I feel like I already get so much lenience and so much freedom with how I teach, I don't want that to be taken away." Janet agreed that such advocacy would not be welcomed by parents or administrators at the school.

Nadine acknowledged such fear existed for many teachers. When she shared her frustration about teachers not being public advocates on social media, one of her mentors reminded her "there are all different roles to advocacy." Some advocates were more vocal than others. However, that did not make them any less important. By the end of the study, Nadine had become more reflective. During the group interview, she shared:

> I don't think you have to make a big stance but you have to be doing *something*. Whether it's right there in your classroom, whether it's talking to one parent, whether it's just being developmentally appropriate. All those things are advocacy because all of those things aren't allowed right now.

In this way, she saw the efforts of others as complimentary to her more vocal forms of advocacy.

As the decision-makers at the building, district, and governmental levels evacuated power and control from educators, the teachers in this study realized they had

to be advocates in order to effect change. The changes they wanted to make would promote teaching practices that were more appropriate for the children with whom they worked. For example, Haley shared why she advocated, stating, "I worry so much more about their well-being and how I get to teach them because I want them to love learning…this is why I stand up to my administrators. It's all about the kids." It was because of the students in their classes that many of the teachers were willing to take a stand and advocate.

Pushing Back Through Projects: "I do a lot more projects than I ever did."

Although the participants in this study worked in an educational system that rewarded academic pushdown through skill-based, teacher-directed methods, they resisted the pressure to conform. Instead, the teachers implemented constructivist approaches, including through the use of projects. Projects are in-depth investigations focused on finding answers about a topic of interest to the children (Helm & Katz, 2011). These investigations are undertaken by a small group of children, a whole class, or occasionally, an individual child. The length of a project varies based on the children's interest but typically takes place over the period of several weeks or months. They are child-centered, in that they follow the interests of the child or children involved in the investigation. Haley noted the importance of following the children's interest because otherwise "the teacher might be focused on things the children don't even have interest in."

Projects align with constructivist approaches because students are involved in constructing deep understandings as they engage with materials and explore ideas related to the topic. They are also transformative in terms of the power structure of the

classroom. The teacher is no longer the authority who directs the classroom, transmitting knowledge to sponges ready to absorb the information. Rather, the children are afforded opportunities to make choices and decisions about their learning and become actively engaged in constructing knowledge. In this way, the power is shared between the teacher and the students. Janet described the shared power as "giving the children a voice in what we research and how our projects will go" and believed it was essential to the development of intellectual autonomy.

Often the teachers learn just as much from the projects as their students. When asked how she knew so much about the topics her students were interested in, Barbara admitted that often she did not. She considered herself to be "a researcher right along with the children." She explained, "I think a good teacher learns because we don't know everything. There are so many things out there that we don't know." Janet agreed stating once a topic had been determined, she started researching. During the observation, her students were exploring magnets during a project on trains. When asked how she knew what material to put out, Janet stated:

> I put the magnets out on Monday because I had researched before we started the study all the different areas of where it could go. I do that for the centers because I need to have an idea of what they can discover in centers. So I looked up train science for first graders and it talked about the magnetic hover trains...I learned that from Peggy [her mentor teacher]. Before she does any kind of study, she will map out what are all of the possibilities that she think this might go into so she can be prepared.

Although the project could, and often did, go in an unexpected direction, Janet constructed some background knowledge so she could better facilitate the children's learning.

Several examples of other projects were seen during the observations and shared by teachers during the interviews. Children were observed working on a castle project in Nadine's and Kathy's first grade classrooms. Haley described several projects her kindergarten students had done over the past few years, including investigations on teeth, sewing, and insects. Rachel told about an investigation on owls. Cindy's students had done several long term projects relating to fairy tales. Barbara shared the details about a project that took place over nearly four months investigating questions stemming from the children's observation that the moon is out during the day.

While the stories about the projects were interesting, it was the fact that the teachers implemented them into their classrooms that was important. By implementing projects, the participants pushed away from the centralized power that created the dominant policies which mandated the teachers to engage in practices that were not in the best interests of their students. Instead, they figured out ways to work within the system of accountability that provided developmentally appropriate experiences for their children.

Leaving Public Schools: "I think I'm bowing out."

An unexpected finding in this study was teachers leaving public schools. Of the seven participants in the study, four planned to leave public school at the end of the academic year. Major reasons for leaving cited by the teachers included: 1) lack of support, 2) conflicts with philosophical beliefs, and 3) pressure from district and governmental mandates. While each teacher's decision to leave was unique, all four attributed their decision to high-stakes accountability.

One of the major reasons for leaving was due to lack of support. Haley did not have the support of her colleagues or administration. This made it extremely difficult for her to continue to teach in ways she believed to be best for young children. For her own sanity, Haley felt she had to leave public school. She was tired of "fighting the fight" and "pushing against the grain". She planned to move to a private school where constructivist approaches were the norm. Haley explained her feelings:

> I am just ready to be supported. I feel like it's a waste of my time to be planning for this reading block and this math one whenever I go and observe at Lakewood (private school) and children are *really learning* and being successful without all that mess. So why am I wasting all my time doing stuff I don't believe in?

The feelings Haley experienced were described by Leiter and Maslach (1998) as emotional exhaustion. Emotional exhaustion is one dimension of teacher burnout (Chang, 2009; Grayson & Alvarez, 2008; Schwab & Iwanicki, 1982; Skaalvik & Skaalvik, 2008). Examples of emotional exhaustion include a decrease in commitment and enthusiasm, both of which Haley experienced. By moving to a position where she would be more supported, she would experience a great deal less emotional exhaustion from high-stakes accountability.

Another reason teachers were leaving public school was due to conflicts in the teachers' beliefs about best practices for young children and the policies of the school. Kathy and Nadine both left their positions because of such conflicts. Kathy accepted a position at an international school in Bangkok, Thailand for the following school year. She was tired of fighting against the educational system of the U.S. Kathy stated, "I love working with poverty level kids. I love the dynamics and the diversity of the classes here. I'm just really over public schools at this point." She was unsure how

long that she would stay; however, she believed the new environment would allow her to teach without the pressure from high-stakes accountability.

Nadine left because of philosophical differences with the district over standardized testing in the early childhood years. She believed assessments should take place authentically and not have the high-stakes consequences attached to them. Nadine did not believe she could continue to administer the district-mandated computerized assessments to her students. While Nadine wanted to continue to work in the large urban district, administrators were making it nearly impossible for her to move to pre-kindergarten, the only grade level she could teach that did not require her to give standardized assessments. She had been offered a pre-k position by another school in the same district; however, the principal rescinded the offer, citing the district would not allow him to honor the transfer request. In a follow-up interview, Nadine shared she had accepted a primary grade position at Lakewood, a private school where constructivist approaches were the norm. Although she was excited about the opportunity and believed the school would fit her philosophical beliefs, she was still concerned people would perceive her decision as "abandoning public education." She reassured others that no matter where she was employed, she would continue to advocate for all children.

A third reason participants were leaving public school was because of the pressure from district and governmental mandates. Because of these intense pressures, Cindy planned to leave the field altogether. Even as a veteran teacher with 18 years of experience, she struggled to keep up with all of the requirements mandated for first grade by the district. Cindy was fortunate to have a great deal of support from her

colleagues and building administrator. However, she was still unable to keep up with the standards and testing being pushed down on first grade. She commented:

> This is not me, even in pre-k what they had to go through, and I know they're adjusting things. I think if I financially needed to work, I'd work in a day care where I would not be faced with it [high-stakes testing].

Cindy's experience was common in the field. Many educators have reported lower teacher morale, less enjoyment in their careers, and an increase in attrition because of pressure from high-stakes accountability (Berryhill, Linney, & Fromewick, 2009; Calderhead, 2001; Goddard & Goddard, 2006; Jones, 2007; Jones & Egley, 2004). In fact, pressure from accountability has been ranked as a top reason why experienced teachers leave the field (Jalango & Heider, 2006; Tye & O'Brien, 2002).

It was not only these four who had considered leaving. Although they had no immediate plans to leave their current teaching positions, the other three participants, Rachel, Janet, and Barbara, each mentioned leaving during their individual and group interviews. They agreed it was the support they received from their colleagues and building administrator that kept them at their school. Barbara asserted, "If I weren't at Grant, I would leave the district. Grant is the only school I would teach at in [school district] period." Rachel and Janet vigorously agreed with Barbara's statement during the group interview. Janet commented that if she left, she would go to a private school to avoid the mandates associated with public school.

While there were a host of reasons why teachers planned to leave public school, the participants in this study directly attributed their decisions to the negative effects of high-stakes accountability. These teachers, like many others, made small compromises throughout the courses of their careers. However, each had some deeply-held beliefs

that were non-negotiable. All of the components of high-stakes accountability, including academic pushdown, standards, and prescribed curriculum, had created an environment in which leaving public school seemed to be the best solution, either personally or professionally.

Summary

As early childhood educators working in an era of high-stakes accountability, the participants were often faced with scenarios that challenged their educational philosophies. The teachers in this study resisted against such accountability by pushing against the boundaries that had been created by the educational system. The resistance took several forms, including making autonomous choices, advocating for children, implementing constructivist approaches, and even, leaving public school. No matter the form, this allowed the teachers to take back teaching and education to provide appropriate practices for young children.

Summary of Findings

This chapter discussed the experiences of early childhood educators who use constructivist approaches during an era of high-stakes accountability. The teachers in this study had constructed perceptions about trust that varied depending on whom they had social interactions. The findings about trust were significant, as high levels of trust are essential for teachers to build strong working relationships with other members of educational organizations (Bryk & Schneider, 2003). Trust between members of an educational organization allows for educators to become more productive. It lowers vulnerability, increasing teachers' willingness to take more risks (Bryk & Schneider,

2004). Trust also facilitates problem-solving by encouraging communication, cooperation, and collaboration (Tschannen-Moran, 2001).

Academic pushdown went against the conception of education these early childhood educators had constructed as well as the early childhood professional standards (NAEYC, 2009). It also marginalizes educators. As more and more mandates are created by policy makers who do not necessarily hold expertise in the field (Jones, 2009), decision-making power is stripped from the teachers. Such a loss of power leads to teachers questioning their ability to teach because adhering to the mandates goes against their beliefs about how young children learn.

Despite the pressure to conform to the status quo, these teachers refused to back down. The early childhood educators in this study used their knowledge about child development and understanding of the individual needs of the children in their classroom to implement child-centered, developmentally appropriate activities consistent with constructivist theory. There was a congruency between these teachers' beliefs and their practices that has not always been observed in early childhood education (Brown, & Lee, 2012; Jones, Burts, Buchanan, & Jambunathan, 2000; Parker, & Neuharth-Pritchett, 2006; Sipek & Byler, 1997). The participants attributed this to a variety of outside factors, including their undergraduate program and field experiences. The resistance was not easy for the teachers, nor did it come without costs. However, the teachers continued to do what they believed was in the best interest of their students. In this way, the essence of the teachers' experiences revolved around the children.

Chapter 5: Conclusions

In the last thirty years, the implementation of policies and mandates has increased accountability for educators in the United States. As accountability has increased, many early childhood educators have reacted to the pressure by using more didactic, teacher-directed approaches. Some have narrowed the curriculum, focusing heavily on the tested subjects (Berliner, 2011; McMurrer, 2008; Nichols & Berliner, 2008) while others have increased the amount of time engaged in preparing students for standardized assessments (Guilfoyle, 2006; Koretz, 2005). However, there are some educators who have refused to bow down to the pressure of high-stakes accountability. These teachers have continued to facilitate student learning using meaningful content and child-centered instructional practices consistent with constructivist theory. The present study investigated the experiences of early childhood teachers who used constructivist approaches and taught in an era of high-stakes accountability and was guided by the primary research question: What does it mean to be an early childhood educator who uses constructivist approaches in an era of high-stakes accountability?

This chapter will discuss some of the important findings from the data, identified by the theme or sub-theme from which it came, and connect those findings to the larger body of research. Implications for practice will be woven throughout the discussion. This will be followed by limitations and suggestions for future research.

Trust

Trust is an essential property of the social organization of schools (Bryk & Schneider, 2002; Hengstler, 2007). It allows educational organizations to become more productive. Schools with high levels of trust are better able to critically examine their

professional practices because teachers are collaborating and communicating with one another and willing to take risks (DeMeulenaere, 2012). Such examinations can take the focus off of the day-to-day practices and look at the more deeply held philosophies and beliefs. It is through these examinations that transformative change can take place.

Trust between members of an educational organization is important is because it can positively affect student achievement (Forsyth, Barnes, & Adams, 2006; Hoy, 2012; Tschannen-Moran, 2014). Comer, Haynes, Joyner, and Ben-Avie (1996) demonstrated that increasing trust between urban school professionals and parents of low socioeconomic status can improve their students' academic achievement. Adams and Forsyth (2013) found the mean scores for reading and math achievement were higher in schools with stronger levels of trust between faculty members. Tschannen-Moran, Parish, and DiPaola (2006) reported positive relationships between student achievement and school climate, with one of the measures of school climate being trust.

Bryk and Schneider (2002) noted that one way to build trust between members of an educational organization is to create common understandings about what students should learn and how instruction should take place. The notion that common understanding need to be constructed leads to two major implications. First, all administrators who are responsible for children at the early childhood level should be required to take early childhood coursework and/or professional development as part of their certification. A report from the Center on Enhancing Early Childhood Learning Outcomes indicated many principals do not have formal training or professional development in early childhood education (Brown, Squires, Connors-Tadros, &

Horowitz, 2014). In fact, very few states had formal requirements for early childhood content in the licensure of principals responsible for early childhood programs. Second, early childhood educators need to engage in conversations with administrators about how young children learn. These conversations should include research about teaching practices, including developmentally appropriate practices. This can help administrators at all levels, including the district, better understand why teachers use constructivist approaches. Even if the administrators do not share the philosophy, understanding can go a long way.

Academic Pushdown

Academic pushdown demonstrates the disconnect between what teachers and policy makers believe to be effective instructional practices. These differences created what Brown (2011) referred to as a "conceptual mismatch" (p. 153). This conceptual mismatch has created an education system in which teachers have to fight the system to use constructivist approaches that are consistent with early childhood professional standards. Thus, it is essential for the experts in the field, the early childhood educators, to help administrators and policy makers understand the negative effects of developmentally inappropriate practices, including academic pushdown. Rather than reacting to what is being pushed on them, early childhood educators should be proactive in sharing their knowledge about childhood development theory and developmentally appropriate practices. One way teachers can do this is through public policy advocacy efforts. Several researchers have recommended that teachers should be actively engaged in discussions with legislators and other decision makers about policies related to education (Berryhill, Linney, & Fromewick, 2009; Brown, 2011; NAEYC 2009).

As many early childhood educators do not know where to start with advocating, an implication for early childhood teacher education programs is to build opportunities for advocacy into existing coursework. Such engagement can include creating brochures for parents about developmentally appropriate practices, writing letters to editors and submitting them to newspapers, emailing or texting policy makers, and visiting with legislators at their respective state capitol. Providing multiple opportunities for guided practice will allow teachers to graduate with the knowledge and confidence to continue to advocate. Early childhood professional organizations can also offer trainings and workshops for in-service teachers on how to effectively advocate. By advocating against mandates that encourage high-stakes accountability and for developmentally appropriate instructional practices, teachers can play a critical role in changing policy at the local, district, state, and federal levels. They can also take back the power that has essentially been stripped from them during the era of high-stakes accountability.

Leaving Public School

Within the theme of teacher resistance, the sub-theme of teachers leaving public school was a surprising finding. Although four of the teachers planned to leave public school, all seven of the participants discussed the possibility of leaving and attributed it directly to high-stakes accountability. Accountability mandates, including high-stakes testing, test preparation, prescribed curriculum, and standards, has been cited as one of the top reasons teachers leave public schools (Jones, 2007; Santoro, 2011; Smyth, 2008; Tye & O'Brien, 2002). The phenomenon of teachers leaving is costly, both for the

schools and district, which must recruit and train their replacements, and the students, who lose the value of being taught by experienced teachers.

In 2010, the National Commission on Teaching and America's Future reported the U.S. spends approximately $7.2 billion a year on teacher attrition. This includes both turnover, in which teachers leave the profession, and churn, in which teachers move from one school to another. In a time when funding for public schools is scarce, this is a great deal of money. While the report does not indicate how much of this spending is due to the effects of high-stakes accountability, it is not unreasonable to assume a percentage of the money is related. An implication for policy makers is to look closer at teacher attrition and create policies to support teachers in public schools. Such policies should include increased opportunities for teacher decision-making.

Teacher attrition from public school is also costly to the education of students. When experienced teachers leave and are replaced by novice teachers, it can negatively affect the students' education. The first few years of teaching is often challenging, as educators develop a better understanding of child guidance and the curriculum. It typically takes three to five years to maximum teacher effectiveness. This is supported by research, which has long demonstrated that educators with less than three to five years of experience are typically less effective than more senior teachers (Carter, Cushing, Sabers, Stein, & Berliner, 1988; Cleary & Groer, 1994; Clotfelter, Ladd, & Vidgor, 2006; Kane, Rockoff, & Staiger, 2009; Livingston & Borko, 1989; Peterson & Comeaux, 1987; Rice, 2010; Sabers, Cushing, & Berliner, 1991; Westerman, 1991). Further studies have suggested the effect of inexperience can be a significant obstacle to student achievement (Aaronson, Barrow, & Sander, 2007; Clotfelter, Ladd, & Vigdor,

2005; Greenwald, Hedges, & Laine, 1996; Grissom, 2011; Rivkin, Hanushek & Kain, 2005). Thus, when an experienced teacher leaves the classroom, it typically takes years for a novice teacher to get to the same level of expertise.

Providing mentoring and support for teachers could lead to fewer teachers leaving public schools. Teacher educators and early childhood education organizations can host networking events for early childhood educators. These types of events can provide teachers with support systems that teachers might not otherwise have. The networking events can take place in person or virtually using social media, such as a Twitter chat. This type of support can assist in increasing teacher retention.

Limitations

This study involved early childhood educators whose teaching practices reflect a philosophy consistent with constructivist theory. During this era of high-stakes accountability, it was difficult to find early childhood teachers who use constructivist approaches. After all, teacher-directed, transmission models of instruction have long dominated education, and, therefore, educational policy (Brooks & Brooks, 1999). Piaget (1969) attested to this challenge when he wrote, "The heartbreaking difficulty in pedagogy…is, in fact, that the best methods are also the most difficult ones" (p. 69). The difficulty in finding teachers who meet all criteria limited the number of participants from which to choose. A related limitation was that, despite great effort to find at least one third grade teacher, none were found to fit the criteria and, thus, participate in this study.

Another limitation of the study was geography, as it was conducted with educators who teach in a relatively small urban and suburban area of the Midwest. It

does not necessarily resemble other communities in other regions due to a variety of factors, including state regulations and mandates. As this was qualitative research, the purpose was not to generalize, but to provide a rich understanding of the lived experiences of these seven teachers (Glense, 2011).

A potential limitation in the design was the data collection sequence: individual interview, observation, individual interview, group interview. The group interview generated additional information that did not emerge during the individual interviews. To be respectful of the participants' time, I limited the group interview to the scheduled 90 minutes. This did not give me enough time to explore all of the new information discussed. A change in the data collection sequence could put an individual interview after the group interview, allowing more time to explore concepts that emerged during the discussion with the entire group.

As with all qualitative studies, researcher bias was a potential limitation to credibility. As a former public school teacher who used constructivist approaches, I related to the experiences of seven participants. To counter the effects of bias, I wrote reflections, including my own assumptions and biases, in my field notebook. I also allowed participants the opportunity to read their transcripts and validate or correct information before analysis occurred (Bazeley, 2013). To ensure that I was not transferring my own experiences, I shared my interpretations with the teachers to ensure my understandings of their experiences were correct. Despite these limitations, the findings will add to the gap in the current literature on the use of constructivist approaches in an era of high-stakes accountability.

Recommendations for Further Research

The conceptual framework for this study was constructivism. This framework helped to inform the design of my study, including the questions I asked during interviews (Maxwell, 2013). Another conceptual framework could have provided a different lens with which to view the teachers' experiences. For example, concepts of marginalization, power, and oppression bubbled to the surface during the data analysis. These concepts are consistent with critical pedagogy. Starting with the theoretical framework of critical pedagogy would have likely changed the questions I asked during the individual and group interviews. This could have led to different insights into the teachers' experiences. Future research can use critical pedagogy or another lens to examine experiences of early childhood educators.

There have been limited studies focusing on the experiences of early childhood educators in public schools who implement constructivist approaches. Future research needs to be done, especially in the primary grades. One such study could focus on Grant Elementary. The school was a unique environment for teachers because of the high levels of support from the building administrator and families. Further research could focus on the use of constructivist approaches in the school and include interviews with the principal and parents. Since the school was touted by the district as a model for Reggio-inspired classrooms, it would also be interesting to hear the perspectives of teachers in the school who were not Reggio-inspired or who did not use constructivist approaches.

The participants shared a variety of factors that influenced them to resist the status quo and implement constructivist approaches. A major factor was the

participants' undergraduate experience. In this program, pre-service teachers were in a co-hort. They were also strategically placed with cooperating teachers who use constructivist approaches for their internships and field experiences. This type of strategic placement does not occur in all early childhood programs, as teacher education programs have been criticized for making assignments based on convenience rather than effectiveness (Darling-Hammond, 2006; Hall, Draper, Smith, & Bullough, 2008; Heidorn, Jenkins, Harvey, & Moiser, 2011). The impact of how both the cohort system and the strategic placement of pre-service teachers affect future teaching practices should be studied further.

Another recommendation for research is for more studies exploring levels of trust between teachers and administrators at the district level. While there has been a great deal of research regarding trust between teachers and parents (Adams & Christianson, 2000; Goddard, Tschannen-Moran, & Hoy, 2001), teachers and colleagues (Forsyth, Barnes, & Adams, 2006), and teachers and building administrators (Moye, Henkin, & Egley, 2005; Tschannen-Moran, 2014), there is a gap in the literature on trust between teachers and district administration. The findings from this study demonstrate the importance of trust at all levels, including teachers and district administration.

Conclusion

This research had the overall goal of examining the experiences of early childhood educators who use constructivist approaches in an era of high-stakes accountability. Data analysis revealed the overall finding that these educators faced obstacles at many different levels. The obstacles were often related to accountability

mandates that had been pushed down from policy makers who did not necessarily understand how young children learn. Despite the obstacles, the teachers resisted policies that did not match their schema of developmentally appropriate practices and implemented constructivist approaches. As autonomous, advocates for young children, these seven early childhood educators displayed a great deal of strength and courage that inspired those around them.

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Appendix A: Individual Interview Questions

Questions for Individual Interview 1

1. Describe your classroom to me.

2. What is your personal definition of constructivism?

3. How does your classroom fit with your definition of constructivism? How does it not fit with your definition?

4. Describe the similarities and differences between your classroom and the other classrooms at your school? Are there any other teachers at your school who have a similar philosophy of teaching? Is this apparent when you visit their classroom? How?

5. How have families of your students felt about your teaching practices? Are they generally supportive or unsupportive? Describe their reactions and/or comments, both positive and negative.

6. Tell me about the relationship between you and your administrator(s) at the building and district levels. Do you feel supported? Why or why not?

7. Describe any experiences, either positive or negative, that have influenced your teaching practices/instructional practices/philosophy of teaching.

8. Tell me about a time when you have experienced a struggle between your constructivist philosophy and the requirements of your job as a teacher.
    - What created this struggle/conflict within you?
    - How were you affected? How were your students affected? Was anyone else affected? How?

9. How has standardized testing impacted or affected your teaching?

10. How are you and your students held accountable by your administrators, the district, state and federal policy makers, etc.?

Questions for Individual Interview 2

1. Tell me about your experience with constructivism in college.

2. Did you start your teaching career knowing that you were going to implement constructivist practices? How have your teaching practices changed over time? What cause you to change?

3. Constance Kamii defines autonomy at the ability to think for oneself independent of reward or punishment. Describe how you encourage autonomy in your classroom.

4. How is autonomy in teachers encouraged or inhibited at the building level, district level, and society in general?

5. Some teachers who align themselves with a constructivist theory of learning experience tension or a conflict between the constructivist practices that they want to provide and the expectations from others (parents, co-workers, administrators, policy makers, etc.). Does this conflict exist for you? How does it play out in your classroom? Or if the conflict does not exist, how do you avoid it?

6. Envision a time when you have found yourself having to defend or protect your teaching practices. Describe the experience. Include how/if this experience changed you as an early childhood teacher.

7. Describe a time when you were asked to do something that you did not believe. Did you do it? Why or why not? What factors influenced you?

8. Are there other factors or experiences that we have not discussed which have impacted your teaching practices.

9. How do the state standards and federal regulations (i.e. the Reading Sufficiency Act, standards, etc.) affect your teaching practices?

10. How have you been able to resist or push against high-stakes accountability?

Appendix B: Group Interview Questions

Introductions: We will go around the table and I would like for you to share your name, current grade teaching, grades you have taught in the past, and years of teaching experience.

1. In one word, how would you describe yourself as an early childhood teacher?

2. What are the differences between teachers whose practices reflect constructivist theory and those whose practices do not (i.e., constructivist and non-constructivist teachers)? What are the characteristics that are essential to being a "constructivist teacher"?

3. On a scale of 1–10, with 1 being unsupported and 10 being completely supported, how do you feel about how you are supported in your teaching practices? Explain.

4. Describe how district, state, or federal policies have supported or failed to support your constructivist teaching practices.

5. In what ways are you an advocate for early childhood education and young children?

6. Who is the most influential person or group of people on your teaching? Why?

7. If you could make one change to education, what changes would you make? This might include changes in the overall system of education, specific policies, decision makers, etc.

8. If you had a personal meeting with the major educational decision makers, what would you tell them?

Appendix C: Starter Code List

Characteristics of the Participants

- Grade taught
- Number of years of experience
- School
- District

Experiences and Factors that Have Affected Participants

- Positive experiences
- Negative experiences
- Factors that have contributed
- Factors that have inhibited
- Level of support from other teachers
- Level of support from parents
- Level of support from administrator(s)
- Type of college program attended
- Mandate to use a prescriptive textbook
- Effect of policies

Conceptual Framework

- Engage in self-selected, authentic tasks
- Act on objects and interact with others
- Are interested and intrigued about a phenomenon
- Refine and coordinate old ways of thinking
- Represent what they know to others
- Engage with other people
- Autonomy
- Value of Errors and Misconceptions