

University of Nevada, Reno

**Beliefs of Infant and Toddler Teachers in a Progressive Childcare Center:
The Impact of Education and Experience**

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science
in Human Development and Family Studies

By

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THE GRADUATE SCHOOL

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prepared under our supervision by

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Abstract

This study examined the progressive beliefs of 11 infant/toddler teachers employed at the Child and Family Research Center on the University of Nevada, Reno campus. Specifically, this study explored possible relationships between teachers' progressive beliefs and their formal work experience and education. Current research was paired with Sociocultural Theory to frame the research questions regarding the influence experience and education may have on teachers' progressive beliefs. No significant correlations were found, although a relationship was established between the number of college credits a teacher had received in Early Childhood Education programs outside of the University of Nevada Reno and the degree to which their beliefs were progressive.

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Chapter 1: Introduction

Infants and toddlers have entered center-based childcare at a rapid pace, making the quality of care in early childhood classrooms an important issue in recent literature. Experts in the early childhood field have found that children who attend quality childcare centers can prosper developmentally from their experiences, while those in poor quality childcare centers can suffer. Thus, raising the quality of care in early childhood classrooms is a growing concern among policymakers, teachers, center directors and parents. One possible variable that may affect the quality of practices used by infant and toddler teachers is teacher belief systems.

First, this chapter will first discuss the growing need for high quality center-based infant and toddler care. Second, the chapter will discuss how teacher beliefs may be related to the quality of care teachers provide for infants and toddlers in center-based care. Third, current perspectives regarding the quality of infant and toddler care and how it relates to teacher beliefs, teacher education, and teaching experience will be discussed. Forth, teacher beliefs will be discussed using a sociocultural perspective to better understand how education and experience may interact with teacher beliefs. Fifth, research hypotheses and questions will be listed and terms relevant to the study will be defined.

The Need for Quality Infant/Toddler Care

Infants and toddlers have entered center-based care at a rapid rate in recent decades (Chao & Rones, 2007). An estimated 1,262,000 children under 3 years of age attended center-based childcare in 2005 (U.S. Census Bureau, 2008). Past research

suggests that infants and toddlers who receive high quality center-based care do not experience negative developmental outcomes (Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; Peisner-Feinberg, Burchinal, Clifford, Culkin, Howes, Kagan, & Yazejian; 2001). This section will discuss the rising need for high quality infant and toddler center-based care in the United States, and how teacher beliefs in infant and toddler classrooms may help enhance the quality of care.

The Need for Infant/Toddler Care. The number of mothers in the work force has continued to increase over the last 3 decades. In 1975, 47% of women with children under the age of 18 already participated in the labor force, and by 2000, this number had risen to 73% (Chao & Rones, 2007). With the majority of women with children currently working outside the home, a large majority of children are being cared for by non-maternal caregivers.

A more recent trend is the number of women in the labor force with children under the age of 3. In 2007, 55.4% of mothers with children under 3 years old worked outside the home (The Bureau of Labor Statistics, 2008). Approximately 22% of these young children will be cared for in a center-based childcare program (Ehrle, Adams, & Tout, 2001). The U.S. Census Bureau (2008) estimated that approximately 1.3 million infants and toddlers attended center-based care in 2005. Due to the number of infants and toddlers that attend center-based care, it is imperative that the quality and long-term developmental effects of care be carefully examined (Ehrle et al., 2001).

The rapid increase of infants and toddlers enrolled in center-based care has generated concern among professionals. There are discrepancies in the literature

regarding the outcomes of infants and toddlers in child care. Experts have speculated that infants and toddlers who attend child care outside the home may have negative developmental outcomes (Brooks-Gunn, Han, & Waldfogel, 2002; Burchinal, Cryer, Clifford, & Howes, 2002; Hill, Waldfogel, Brooks-Gunn, & Han, 2005). For example, one study found that infants whose mothers worked outside the home more than 30 hours per week had lower scores on school readiness tests at 36 months compared to children whose mothers worked fewer hours in the first year of life (Brooks-Gunn et al., 2002). However, many studies have shown developmental gains for infants and toddlers, but identified the quality of the care at the childcare center as a predictor of the developmental outcome (Burchinal et al., 2000; National Institute of Child Health and Human Development, 2006; Peisner-Feinberg et al., 2001). Even when characteristics of individual children and families were controlled for, higher quality care was related to higher measures of cognitive, language, and social development throughout the first 3 years (Burchinal et al., 2000). Positive long-term cognitive and social outcomes have been reported in children through the second grade (Peisner-Feinberg et al., 2001). The National Institute of Child Health and Human Development (2003) asserted that “it is the quality of care that appears to have the most pervasive consequences for the child’s development” (p. 451). Teachers’ beliefs may affect quality of care, but are rarely acknowledge in childcare centers.

Quality of Infant/Toddler Care. In the United States, most child care is not federally funded, and therefore is not subject to federal regulations or standards of quality. Each state is responsible for regulating childcare centers by establishing agencies

that oversee the licensing of all center-based child care. Although these regulations vary from state to state, they are similar in that the goal is to assure that all operating childcare centers meet basic health and safety requirements. It is at the discretion of individual childcare centers whether they aim to meet standards of quality above those basic health and safety requirements. Simply stated, state regulations are typically interested in child protection rather than child development (Gallagher, Rooney, & Campbell, 1999). Child protection is usually regulated by attempting to increase the quality of the structural variables of a childcare center, which include teacher to child ratios, group size, staff turnover rates, and teacher qualifications.

The quality of process variables within a childcare center may be equally important to support children's development. Process variables include practices such as responsiveness, building relationships, and creating developmentally appropriate activities and opportunities for young children (Howes, Phillips, & Whitebook, 1992). While childcare owners and director have greater control over structural variables within a childcare center, they may have less control when attempting to regulate process variables, which directly relate to classroom practices and may be affected by teacher beliefs. The quality of classroom practices has been shown to relate to individual teachers and the beliefs they hold, especially when looking at relationships between teachers and children (Burchinal et al., 2002; Peisner-Feinberg et al., 2001). This may suggest that process standards and specific practices imposed upon teachers by program directors may not transfer to the quality of care provided to infants and toddlers if teacher's beliefs do not concur with the practices imposed by directors. In 1993 and 1994, a study examined

749 childcare classrooms and found that only 14% of the classrooms met process standards high enough to support appropriate development and learning in young children, while 86% of the classrooms were classified as mediocre or poor quality (Helburn, 1995; Helburn & Howes, 1996). Among the infant and toddler classrooms included in the study, only 10% were rated high quality, 40% were rated poor quality, and the remaining classrooms were classified as “mediocre.” These statistics showing poor quality in the care provided by infant and toddler teachers are alarming considering quality of care is the greatest indicator of the developmental outcomes of infants and toddlers attending center-based care (The National Institute of Child Health and Human Development, 2003). Beliefs among infant and toddler teachers may affect process variables, such as attachment, interactions, and developmentally appropriate practices in the classroom. Yet, studies have found that few teachers in infant/toddler classrooms have beliefs that are informed by theories of child development (Brownlee, Berthelsen, Irving, Bouton-Lewis, & McCrindle, 2000).

Centers that aim to be “high quality” must use practices with the intent of being both safe *and* developmentally enhancing. Practices guided by child development are said to be “developmentally appropriate.” Developmentally Appropriate Practice (DAP) has been defined as a process of making decisions based on three things: child development in general, the needs of each individual child, and the social and cultural contexts of the children (Copple & Bredekamp, 2009).

In early childhood education (ECE), teacher beliefs and quality of care are often measured and compared by looking at the level to which teachers endorse DAPs and the

actual amount of DAPs teachers demonstrate in the classroom. Many DAPs parallel themes of progressive education and beliefs, and as a result, DAP can be related to teacher beliefs that are more progressive. Progressive philosophies tend to build curriculum around children's individual and group interests, making it easier to be more flexible in the daily decisions teachers make. Using progressive philosophies, teachers are free to adapt their curriculum to the needs of the children in their care.

In this study, teacher beliefs were defined as either traditional or progressive. These terms encompass a wide range of other terms used throughout the literature, and can be applicable to infant and toddler teachers. For the purpose of this study, "traditional" beliefs are those that endorse practices that have been consistent in education for decades. In this paradigm, teachers see themselves as authority figures with the role of giving information to their learners. The common method traditional beliefs endorse is telling the learner rather than scaffolding him or her to gain the knowledge on his or her own. These teachers typically use methods that are teacher-directed and believe in set standards and curriculum for all children, regardless of individual or group differences within the class. "Progressive" beliefs are those that deviate from traditional ways of thinking about teaching and learning. Teachers with progressive beliefs tend to be open to integrating new and innovative approaches, are learner-centered, are driven by theory and knowledge of child development, and emphasize the social and cultural experiences in the learning environment as much as the cognitive experiences presented to the learner. Progressive beliefs occur when a teacher truly believes that learning must be meaningful in the context of the learner's social life.

To summarize, the U.S. Census Bureau (2008) reported that in 2005, approximately 1.3 million infants and toddlers attended center-based child care. High quality care for these infants and toddlers is essential to their later development and learning (Burchinal et al., 2000; National Institute of Child Health and Human Development, 2006; Peisner-Feinberg et al., 2001). DAP within classrooms is an indicator of high quality care and can be predicted by looking at teacher beliefs. Thus, it may be feasible to raise the quality of care for infants and toddlers in childcare centers by attempting to foster progressive beliefs in teachers who are making the daily decisions regarding the care and education of young children.

Predictors of Progressive Beliefs

As previously mentioned, the developmental outcomes of infants and toddlers now attending center-based child care are greatly affected by the quality of care provided. One important indicator of high quality care is more DAP demonstrated by teachers in the classroom. It is likely that teachers who hold progressive beliefs endorse DAP more than those who hold traditional beliefs. Therefore, it may be possible to raise the amount of DAP in the classroom by fostering progressive beliefs in teachers of young children.

Within some childcare centers, a “philosophy” of education often becomes a theme that is adopted by administrators and incorporated into classrooms. The term “philosophy” is used vaguely because not all centers base their philosophy on research and theory. Among philosophies in the field of Early Childhood Education that are theoretical and research based, many can be classified as progressive philosophies that somewhat deviate from what has been long-standing tradition in American education. For

example, one such philosophy, the Reggio Emilia approach, is known to incorporate developmentally appropriate practices because teachers make decisions regarding the care and education of children based on individual children's development as well as the needs of each group of children (Copple & Bredekamp, 2009). Using such a philosophy, teachers may have more flexibility to use practices that are guided by their beliefs. With experience in a center utilizing the Reggio Emilia approach, teachers are able to learn the philosophy, implement the principles in their classrooms, and reflect upon daily practice. The hands-on experience with the progressive teaching methods coupled with reflection regarding their current beliefs may support a transformation of teacher beliefs. It is unclear whether this teaching experience will have an effect on the level to which their beliefs are progressive.

While the structure of a childcare center and its underlying philosophy may compel teachers to use a certain set of practices, it is likely that a teacher's individual beliefs play a much larger role in determining whether a center-wide philosophy is demonstrated in his or her classroom. Teacher beliefs have been said to guide behaviors and practices in the classroom (Brown & Cooney, 1982; Pajares, 1992; Sigel, 1985). Specifically, in the field of early childhood education, DAP has been found to correlate to progressive teacher beliefs, or those that deviate from traditional beliefs in our society (McMullen 1999). For example, progressive beliefs deviate from more didactic teacher-centered classrooms in which the teacher is the active agent instilling knowledge into his or her passive students (McMullen). Progressive beliefs occur when teachers believe in

child or learner centered approaches to teaching and view themselves less as “teachers” and more as “facilitators.”

Because such progressive teacher beliefs may be correlated to beliefs that endorse DAP in infant and toddler classrooms, the researcher felt it was important to examine what might lead an infant and toddler teacher to have progressive beliefs. Education in teacher preparation programs specific to ECE is one factor that has been said to affect teacher beliefs. The relationship between progressive teacher beliefs and teaching experience in a progressive setting is less clear. In fact, at the onset of this study, the researcher was unaware of existing studies that examined experience in settings that were practicing progressive philosophies of education. Likewise, studies had not focused on progressive teacher beliefs as a function of both teacher preparation programs and teaching experience.

Teacher Preparation Programs. Recent legislation has attempted to improve the quality of classroom teaching practices in public schools by increasing educational requirements for teachers. According to a document released by the U.S. Department of Education (2006), “One of the most important factors in raising student achievement is a highly qualified teacher” (p. 1). From this statement, a section of the No Child Left Behind Act, known as the Highly Qualified Teachers Act (HQT), was constituted to specify that all teachers must hold a bachelor’s degree or higher, be state licensed, and pass appropriate subject matter and pedagogy exams. Thus, the current trend is to increase quality of education by employing teachers who have more teacher preparation.

Similar trends are seen in Early Childhood Education programs, as preschools also attempt to employ teachers with higher levels of formal education. The NAEYC has recently updated teacher qualification requirements for national accreditation. New requirements state that by the year 2020, the teachers at preschools with 4 or more classrooms must be comprised of 75% who hold bachelor's degrees or higher, and the remaining 25% must hold Associates degrees (National Association for the Education of Young Children, 2006).

Studies support the idea that teacher education increases developmentally appropriate practices in the classroom, thus supporting policies aiming for higher levels of formal teacher education (Brownlee et al., 2000; Cassidy & Buell, 1995; Wishard, Shivers, Howes, & Ritchie, 2003). In theory, requiring teachers to become more educated seems like a viable technique for increasing the quality of infant and toddler care. However, it is unclear how teachers' belief systems affect and are affected by formal education.

Teacher preparation programs that emphasize a progressive teaching philosophy may or may not result in teachers' adoption of progressive beliefs. Prior to this study, there were no studies to examine this specific relationship, although some studies offered suggestions. For example, one investigation had found a positive correlation between teachers' education in ECE and their endorsement of beliefs that support DAP (Smith, 1997). On the other hand, another study found that education alone is insufficient to influence teachers' beliefs toward more progressive teaching and learning (Bird, Anderson, Sullivan, & Swidler, 1993). There is a gap in the current literature to

determine the relationship between teacher preparation programs endorsing the same. This literature will be discussed further in chapter 2.

Teaching Experience and Progressive Teacher Beliefs. Many childcare centers establish their own program philosophy, and teachers are expected to abide by it, regardless of the degree to which their individual philosophies are compatible with the program's philosophy. However, it is unknown whether exposure to beliefs is sufficient to provoke change when they are not aligned with teachers' pre-existing beliefs.

In summary, progressive beliefs have been correlated with higher levels of DAP, which is a characteristic of high quality care (Smith, 1997). High quality care leads to positive developmental outcomes, and thus, it may be that increasing the level to which teacher beliefs are progressive can positively affect children's developmental outcomes.

Unexplored Topics

There are a variety of topics pertinent to teacher beliefs that remain unexplored in the current research. This study explored some of these topics.

The majority of research regarding teacher beliefs has been conducted in elementary and secondary classrooms, and with pre-service teachers preparing for a career with these age groups. Although research exists concerning early childhood teachers' beliefs, the majority has compared Pre-K (3 to 5 years of age) teachers to primary grade teachers (e.g., McMullen, 1999; Stipek & Byler, 1997; Vartuli, 1999). As previously discussed, the number of infants and toddlers in center-based care has increased in the United States (Ehrle et al., 2001). It is essential to study this age group for two reasons. First, infants and toddlers have needs that differ from older children's

needs. Practices that are considered “developmentally appropriate” for older children, such as reasoning to modify behavior, differ from practices considered to be “developmentally appropriate” for infants and toddlers, such as redirection to modify behavior, and teacher beliefs will affect these practices. Second, the period from birth to age 3 has been found to be a sensitive period for brain development, and positive experiences during this life stage impact later development (Blakemore & Frith, 2005; Perry, 2002; Rima, 1997).

Existing research has explored the correlation between developmentally appropriate beliefs and education. Few studies, however, have examined teachers with education in a university early childhood education program that explicitly teaches a progressive philosophy. Likewise, very few studies exist that examined the effects of teaching experience on teacher beliefs, and none of these examined the effects of teaching experience in a progressive setting on progressive teacher beliefs. This study examined teachers currently working in a progressive childcare setting to explore their progressive beliefs as a function of this experience as well as the potential impact of education in a progressive teacher preparation program.

Theoretical Framework

This purpose of this study can be understood by framing the research questions around sociocultural theory, which “embraces all higher mental functions” (Vygotsky, 1986, p. xxx). Higher mental functions are important in the process of constructing and reconstructing teachers’ beliefs (Vygotsky, 1996). Sociocultural theory evolved from the work of Lev Vygotsky, a Russian psychologist, and is largely used to discuss child

development and child learning experiences. However, more recently, Vygotsky's work has been extended and applied to adult learning, as the mind continues to develop throughout adulthood (Smith & Pourchot, 1998). The current study attempts to extend the principles of sociocultural theory beyond the childhood years of development. John-Steiner & Mahn (1996) define the major concepts behind the framework, as they apply to human learning. First, human behaviors take place within the context of our culture. Second, the theory emphasizes the importance of language, both internal and external, as a mediator of our thoughts and behaviors. Third, the historical development of society and the individual in the society both play a key role in determining individual behaviors. Sociocultural theory guides understanding about human development, human learning, and human behavior in a social context. These concepts are relevant to the learning process that occurs in the social context of teacher preparation programs and educational settings.

The focus of this section is to connect sociocultural theory and teacher beliefs. Specifically, this section will use concepts from sociocultural theory to understand how teacher beliefs may be mediated by teacher preparation programs and teaching experience. First, this section will begin by discussing the formation of teacher beliefs using a sociocultural perspective, emphasizing the importance of pre-existing beliefs in the learning experiences provided by teacher preparation programs and work environments. Next, this section will discuss the possible interaction between teachers' pre-existing beliefs about learning and teaching and teaching experiences. Teaching experience as part of educational teacher preparation programs will be differentiated from

teaching experiences as a lead teacher with full control of the classroom. This will provide an understanding of how a learned philosophy may or may not be adopted into teachers' belief systems during these experiences.

Understanding the effects of education and teaching experience through a sociocultural perspective begins by understanding the ways in which teachers' beliefs were constructed prior to the new learning experience. Even if learners enter teacher preparation programs or teaching positions with no prior experience in the field of education, they bring some pre-existing knowledge and beliefs that will play a key role in the learning experience. This may be especially true for teachers in the United States, as schooling is a large part of our culture and most individuals have several years of personal experience with educational settings before they begin their college and/or teaching journeys. Over the years, in the historical context of the United States education system, traditional education methods have been widely accepted. Although there have been brief eras of attempted reform to progressive education, traditional methods of pedagogy have repeatedly prevailed. Teachers are exposed to different beliefs about teaching and learning throughout the lifespan that are intertwined with social, historical, cultural, and material processes (John-Steiner & Mahn, 1996). This exposure results in the internalization of beliefs, and consequentially the creation of individual belief systems. Because traditional teaching philosophies have been salient in education systems, teachers' beliefs have widely represented more traditional conceptualizations of teaching and learning.

The emphasis placed on both social (external) *and* individual (internal) processes during the construction of knowledge is one of the elements of sociocultural theory most relevant to this study (John-Steiner & Mahn, 1996). External processes that occur in college classrooms when students learn about education and teaching play an important role in teachers' construction of knowledge. However, internal processes, i.e. the way in which prospective teachers are integrating new knowledge with existing knowledge, are equally important to the re-construction of knowledge and belief systems, but are sometimes overlooked in teacher preparation programs and teachers' work environments. Researchers who explore teacher beliefs also note this internal process by stating that "professional growth is an intensely private affair" (Kagan, 1992, p. 65). To clarify, there are several students and only one teacher in a college classroom. The teacher presents the same material to all students and in the same manner, which assures that all students will experience the same external (social) process during the construction of knowledge. However, each student comes to the class with unique previous education and experience, and this will determine the internal process that each student encounters when integrating such knowledge from the external environment. Thus, teacher education and practical experience alone may not be sufficient to change teacher beliefs, without providing opportunities for students to bring their existing beliefs to the surface and address them. Educators and employers may need to encourage teachers' metacognitive thinking to explicitly address internal processes. By acknowledging these internal processes during the construction of knowledge, teachers may learn to reflect upon their belief systems during their education and experience.

Sociocultural theory provides a better understanding of how education influences teacher beliefs. It suggests that knowledge is not internalized directly (John-Steiner & Mahn, 1996). This means that information regarding progressive philosophy may be presented to students throughout their education, but the external environment, primarily the teaching experience teachers are immersed in, alters individual processes of internalization. Vygotsky (1978) states “learning is more than the acquisition of the ability to think; it is the acquisition of many specialized abilities for thinking about a variety of things” (p. 83). Learners presented with principles of a progressive teaching philosophy will internalize the information differently based on these specialized abilities. Therefore, it is difficult to predict how the learner will process, interpret, and adopt the information when constructing his or her belief system. Furthermore, Vygotsky (1997) labeled the formal education experience “re-education” because new knowledge is integrated into the learners existing knowledge and beliefs. This suggests two important ideas regarding teacher education programs that attempt to instill progressive beliefs among learners. First, altering teachers’ belief systems through formal education may be a difficult feat, especially if the principles of the philosophy presented do not align with the pre-existing beliefs with which the learner comes equipped. Second, pre-existing beliefs must be acknowledged by teaching faculty and openly discussed among students to allow students to reflect upon their existing beliefs. From a sociocultural perspective, these strategies may be more likely to alter teachers’ beliefs, where a program that does not promote reflection may only make the learner’s existing beliefs that much more salient.

The aforementioned characteristics of sociocultural theory are commonly used to interpret education and individual learning that occurs. They can also be used to better understand the processes that occur when teachers gain experience while immersed in a progressive philosophy. Sociocultural theory suggests that children learn best when the learning is meaningful and relevant to their external world. Applying the same principle to adults, teachers may learn progressive philosophies best in the context of their own classroom, where learning may be more meaningful than in the formal college classroom. Learning about progressive philosophies as part of the teaching experience allows them to experiment with the ideas presented to them, slowly working out how the ideas fit into their existing beliefs. Teachers' practical experience also allows them to be immersed in the culture of the environment, providing social experiences among other teachers. This creates opportunities to learn from others by observing and discussing experiences and thought processes that are occurring. According to Vygotsky (1978), functions in development of the mind take place twice: first on the social level as the learning takes place in a social context, then on an internal level. Teachers working in a progressive setting may be able to learn principles from the philosophy on a social level first before being asked to apply them into their personal belief systems. Within the social setting of a school or childcare center, this is likely to occur as teachers do learn from each other. However, within teacher preparation programs, the learner must rely solely on brief field experiences for social learning opportunities. Collaboration, another imperative component of the learning process, also allows learners to reflect upon their behaviors and the behaviors of others (Foreman & McPhail, 1993). When collaborative partners

share common goals, learning in the social context is greatly enhanced. Although simple forms of collaboration are possible in the college classroom, the culture of teaching in a progressive school increases the possibility that collaboration with other teachers can happen over time to establish shared goals, values and ideas (Lasky, 2005). If teacher preparation programs teach students progressive philosophies using progressive methods such as allowing students to work together, collaborate, and discuss beliefs, it may be possible for social learning to equally occur in these settings. Some theorists have begun to extend sociocultural theory to adult learning, and offer several examples of how this is possible in classroom and work-place settings (see Smith, 1998).

Using the sociocultural perspective as a theoretical framework for teacher beliefs, it is clear that the learning process that both prospective teachers and experienced teachers encounter when learning an unfamiliar philosophy is multi-faceted. The learner comes into the learning experience with beliefs that have been constructed and re-constructed several times. Those pre-existing beliefs, which may conflict with a progressive philosophy, play a large role in the way each learner will internalize the information being taught and/or observed. The educational setting of teacher preparations programs limits the physical and psychological tools the learner can utilize. It is relevant to question how education and experience differ in their effects on teachers' beliefs when attempting to alter them to reflect a progressive philosophy. Specifically, this study inquired about the different impacts of progressive teacher preparation programs and practical teaching experience in a program using a progressive philosophy on teachers' progressive beliefs.

Research Questions

This study explored the relationships between teacher preparation programs and teaching experience in a progressive childcare center with teacher' progressive beliefs. Specifically, the following research questions reflect the intended purpose of this study.

The first two research questions explored the relationship of teachers' progressive beliefs and their teaching experience within and outside of a progressive childcare center. To examine this relationship, the researcher obtained data from teachers at the Child and Family Research Center (CFRC) located on campus at the University of Nevada, Reno (UNR). Within the CFRC, administrators, consultants, and department faculty work closely with the teachers to implement current and progressive philosophies and practices within classrooms. Teachers at the CFRC are encouraged to implement a progressive philosophy known as the Reggio Emilia approach. The infant/toddler classrooms at the CFRC contain two lead teachers who collaborate with each other daily regarding the care and education of the children. In addition, monthly "Teacher Collaboration Meetings" are held to allow teachers to discuss teaching and learning with several colleagues. This creates a social environment in which teachers can implement a progressive philosophy, while openly reflecting upon how it is/is not consistent with their existing beliefs. All participants had some level of experience teaching infants and toddlers in a childcare center that is known to emphasize progressive teaching styles and methods as well as promote progressive beliefs.

Research Question #1. Will there be a positive correlation between the reported months of experience teaching at the Child and Family Research Center and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

Research Question #2. Will there be a negative correlation between the reported months of experience teaching outside of the Child and Family Research Center and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

The next two research questions explored the relationship of teacher beliefs with education. Specifically, these questions explored how general education and ECE specific education might influence the progressiveness of teachers' beliefs.

Research Question #3. Will there be a positive correlation between the reported number of general college credits and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

Research Question #4. Will there be a positive correlation between the reported number of ECE-related credits and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

The remaining two research questions explored the relationship of teacher education with teacher beliefs. Specifically, the questions attempted to explore relationships between beliefs and ECE credits in a progressive teacher preparation program, and ECE related credits outside of a progressive teacher preparation program. To explore this relationship, the researcher obtained the educational background of infant/toddler teachers at the CFRC. The CFRC works in conjunction with the Human Development and Family Studies Department which offers the Early Childhood

Education Program at the University of Nevada, Reno. Faculty members within this department collaborate in an effort to teach progressive philosophies, primarily the Reggio Emilia approach, to prospective teachers. Classes in the ECE program are designed to encourage students' reflective thinking about their own educational beliefs as they are presented with progressive theories that often conflict with their existing theories. The following research questions address the relationship between students with credits in this program and those with credits in other programs.

Research Question #5. Will there be a positive correlation between the reported number of credits earned through the Early Childhood Education program at UNR and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

Research Question #6. Will there be a negative correlation between the reported number of ECE-related credits from colleges outside of the Early Childhood Education program at UNR and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

Definitions

For the purpose of this study, the following definitions of phrases and terms apply:

Infant/Toddler. An infant is a child who ranges in age from birth to 11 months, whereas a toddler is a child who ranges in age from 12 to 36 months. In this study, these periods may be combined to refer to infants and toddlers, or those who range in age from birth to 36 months.

Early Childhood Education. Early childhood education is the field that provides and/or focuses on education for children from birth through 8 years of age.

Teacher Beliefs. Teacher beliefs will be defined as internal thoughts and implicit assumptions that teachers hold about children, teaching, and learning. Traditional beliefs are those that embrace the societal norm within the United States. They include the belief that teachers hold the knowledge that students are to learn. In contrast, progressive beliefs are those that are modern and centered on child development. They include the belief that children learn best when they construct their own knowledge. With this belief, teachers are not to “teach” children, but rather guide them as they “teach” themselves. For the purpose of this study, teacher beliefs will be classified as progressive based on the results of the Teacher Belief Q-sort (TBQ).

Developmentally Appropriate Practice. This study used the original definition of developmentally appropriate practice. Defined by Bredekamp and Copple (1997), developmentally appropriate practice is a process of making decisions based on three things: child development in general, the needs of each individual child, and the social and cultural contexts of the children.

Education. This study measured several levels of education. Therefore, for the purpose of this study, education is defined as college-level courses that teachers have received credit for passing. This included courses from both universities and community colleges. This study also looked at courses teachers have taken from a teacher preparation program. A teacher preparation program is a college program in which students, upon completion, will be qualified to become licensed teachers.

Teaching Experience. Teaching experience was defined as a period of time(s) when the teacher held a lead teaching position in her own classroom, either alone, or with a co-teacher. For this study, experience only counted when the teacher was in full control of the classroom, or shared this role with only one other co-teacher, and was able to make decisions regarding classroom practices.

Chapter 2: Literature Review

This chapter reviews existing literature on the topic of teacher beliefs as a function of teacher preparation programs and classroom teaching experience. Several researchers have conducted studies to examine the effects of education on teacher beliefs. More recently, researchers have carried out studies in the field of Early Childhood Education to examine the extent to which teachers with early childhood education credits have beliefs that differ from those teachers with only elementary education credits. Most of these studies examine the level to which teachers endorse DAP (developmentally appropriate practice). Although the concept of DAP parallels that of progressive practices, studies exploring the specific effects of progressive education on progressive beliefs do not exist.

Similarly, studies have compared differences between novice and experienced teachers with variables such as problem solving and classroom management techniques. However, few studies exist to explore the effects of classroom teaching experience on teacher beliefs. Those that do exist have looked at changes during a new teacher's student teacher experience. These studies limit the ability to look at the true effects of classroom experience, however, because students are not able to fully control their own techniques in the classroom during this time. Studies do not exist to examine the effects of classroom experience, specifically in a center or school that attempts to incorporate progressive teaching practices, on teacher beliefs.

The focus of this chapter is to present existing studies on the effects of education and experience on teachers' beliefs. First, this review will begin by presenting different

conceptualizations of teacher beliefs in the literature, and how teacher beliefs relate to the field of early childhood education and progressive beliefs. Second, this review will discuss findings regarding the effects of general education, early childhood related education, and progressive education on teachers' beliefs. Third, this review will talk about studies that have examined the effects of classroom teaching experience on teacher beliefs, primarily focusing on beliefs during the student teaching experience because most research regarding beliefs and experience have focused on this time. Fourth, this section attempts to make a connection between teacher beliefs and teaching experience in a progressive setting. Last, this chapter discusses the few studies that have been conducted to look at the relationship between teacher beliefs, education, and experience, emphasizing the gaps in this research that exist, thus justifying the current study.

Teacher Beliefs

The term "teacher beliefs" has evolved in educational research for several decades. The concept has been used in the research to focus on the thoughts that drive teacher behaviors. Looking at thought processes as a predictor of teacher behavior was a break-through in education for both research and practice. The concept gave teachers a new way to understand their own classroom practices and educators in teacher preparation programs a new way to help prospective teachers reflect on their knowledge and beliefs.

This section will first present conceptualizations of teacher beliefs that appear in the literature, summarizing them to create the definition that will be used for the purpose of this study. Second, this section will discuss failed attempts to change teachers' beliefs.

The literature rarely offers a clear definition of the term “teacher beliefs.” Kagan (1992) broadly defined the term as “tacit, often unconsciously held assumptions about students, classrooms, and the academic material to be taught” (p. 65). This definition is useful because it implies that beliefs are unspoken and sometimes not even realized by the teacher. This is synonymous to other definitions within the literature. The lack of clear conceptualizations has been referred to as a limitation in research regarding teacher beliefs (Kagan, 1992; Pajares, 1992). While clear definitions of the term are rare, dimensions are commonly used to better define the broad concept. The terms ‘traditional’ and ‘progressive’, which originated from studies performed in the 1950s, are among the most salient dimensions in the literature (Kerlinger & Kaya, 1959). To summarize, traditional teacher beliefs include the teacher’s view of him/herself as an expert in subject matter and an authority figure that must dictate how students will learn content knowledge. In contrast, progressive teacher beliefs occur when the teacher is concerned about the needs and interests of individual children and teaching them how to meet the larger social demands of society (Kerlinger & Kaya, 1959).

Although this only represents one conceptualization of teacher beliefs, the majority of other conceptualizations somehow fit into these dimensions. For example, the dimensions of ‘concrete’ versus ‘abstract’ teacher beliefs have also been created to study teacher beliefs (Harvey, White, Prather, Alter, & Hoffmeister, 1966). In this definition, concrete belief systems exhibit the need for a highly structured environment similar to traditional beliefs, where abstract belief systems are receptive to children’s desires, a similarity to progressive beliefs. Other studies have used the terms “informed beliefs” to

describe those driven by theory versus “naïve” beliefs to describe those driven by traditions (Dart, Boulton-Lewis, Brownlee, & McCrindle, 1996). Bunting (1985) hypothesized that many teachers hold “directive” beliefs, which value traditionalism. Bunting then identified three more terms that better fit with progressive beliefs. “Affective” beliefs emphasize emotional development of the learner as well as the relationships the learner builds; “cognitive” beliefs emphasize the role of the learner’s mental processes and the importance of maximum engagement for learning; and “interpretive” beliefs emphasize the importance of making content meaningful to the learner. Most recently, Silvernail (1992) added a dimension that perhaps summarizes the kind of progressive philosophy this study attempts to examine. Termed “romantic orientation,” these beliefs combine traditional and progressive beliefs to create an ideal situation in which the teacher believes in the importance of providing new knowledge to learners, but sees him/herself as a facilitator in a learning process where the learner also has responsibility. Contrary to such organized concepts of teacher beliefs, Clark and Peterson (1986) theorized that beliefs cannot be defined as a concept themselves, but must be thought of as a range of concepts including knowledge, thinking, perceptions, expectations, and attitudes.

In summary, the “traditional” and “progressive” dimensions of teacher beliefs encompass most other conceptualizations. There are several definitions in the literature, but each one appears to parallel the concepts of traditional and progressive beliefs. Traditional beliefs are more consistent with methods that have prevailed in the public education system for decades. Teachers perceive themselves as authority figures and their

perceived role is to give information to the learners, typically by telling them rather than helping them learn on their own. Teachers use methods that are teacher-directed and believe in set standards and curriculum for all children regardless of individual or group differences. Progressive beliefs are those that deviate from traditional ways of thinking about teaching and learning. Teachers are open to integrating new and innovative approaches, they are learner-centered, they are driven by theory and development, and they emphasize the social and cultural experiences in the learning environment as much as the cognitive experiences presented to the learner. Teachers holding progressive beliefs typically believe that learning must be meaningful in the context of the learner's social life.

More recently, researchers have examined teacher beliefs within early childhood education settings. Although these studies do not use the term "progressive beliefs," they use terms that parallel the construct. For example, researchers have studied "epistemological beliefs," defined as beliefs about learning and teaching, to identify beliefs of toddler teachers as relativistic, meaning they were reflective when identifying their beliefs regarding their own classroom practices (Berthelsen, Brownlee, & Boulton-Lewis, 2002). DAP has been found to correlate to progressive teacher beliefs, or those that deviate from traditional beliefs in our society (McMullen, 1999). With the exception of Berthelson and colleagues' work, most studies were conducted with samples of teachers in classrooms serving children 3 to 8 years of age. Very few studies have examined the beliefs of infant and toddler teachers.

Although research and theory have supported progressive education perspectives for decades, teachers and administrators have met possible reform with hesitation, and the majority of public schools in the United States tend to use traditional methods (Prawat, 1992). However, there have been significant attempts to reform traditional education techniques by experts in the science and mathematics fields. Many studies within this body of literature specifically discuss the role teacher beliefs play in trying to reform education, and the authors challenge attempts at teacher reform without first addressing teachers' beliefs (Cuban, 1990; Czerniak, 1995). Cuban (1990) coined the term "value judgments" to refer to reforms that create controversy between progressive and traditional educational beliefs (p. 8). These studies emphasize the role teacher beliefs play in educational reform, and suggest that teacher beliefs should be the main priority when attempting to implement changes in education. Currently, there is a push in the public and private sectors of education to hire teachers that are "highly qualified," a qualification that is measured by levels of education alone (National Association for the Education of Young Children, 2006; U.S. Department of Education, 2006). Requiring higher levels of education seems like a viable way to influence teacher beliefs and behaviors, however, it is important to look at the literature regarding teacher preparation programs and their effects on prospective teachers to determine whether education alone is sufficient to change practices. It is possible that beliefs may interfere with teachers' implementation of new knowledge gained if they are not addressed.

Teacher Preparation Programs

For several decades, teacher preparation programs have attempted to influence the beliefs of prospective teachers. Teacher preparation programs aim to provide teacher candidates with the knowledge and skills required to succeed in teaching positions. Thus, they attempt to impart certain beliefs upon their students, directly or indirectly. However, the effects of teacher preparation programs on teacher beliefs are still unclear and many studies report conflicting results. This section will focus on the effects of teacher preparation programs on teacher beliefs. First, this section will discuss attempts that have been made to influence teachers to believe in and use progressive methods of education. Next, this section will discuss the findings of early childhood education studies regarding the effects of teacher preparation programs on teacher beliefs. Last, this section will connect teacher preparation programs in early childhood education and progressive beliefs.

Several educators have attempted to teach principles that are progressive in nature, such as emphasizing the process rather than the end product of learning. Some educators who have directly attempted this feat have faced obstacles that hindered their ability to bridge the gap between the students' existing beliefs and conflicting beliefs being presented (Bird et al., 1993). However, some educators have been able to depict a positive relationship between training in a progressive philosophy and beliefs that reflect that philosophy. In one study, prospective teachers were trained in a method that has many characteristics of a progressive philosophy, such as the focus on building a classroom community and a focus on the process of learning rather than an outcome (Rimm-Kaufman, Storm, Sawyer, & Pianta, LaParo, 2006). Participants in this study who

had received training in the approach demonstrated beliefs that were more consistent with the approach than students who had not received the training.

Researchers have set up courses in teacher preparation programs with the direct intent to make teachers' beliefs less constrictive by allowing students to recognize, reflect upon, and challenge their existing beliefs. In one such study, an instructor specifically attempted to challenge the long-held notion that teaching is a matter of telling, learning is a matter of remembering, and learning to teach is a matter of learning a set of ways to act rather than thinking about ways to act in the classroom (Bird et al., 1993). In this study, the author designed a course to introduce new ideas about teaching that conflicted with traditional beliefs. Students were required to take the course at the beginning of their teacher preparation program. The course engaged them in activities such as journal writing, group work, and small group discussion to allow them to reflect upon their beliefs throughout the course. Although beliefs were not measured in this particular study, the course instructors reported many challenges in their attempts to support interaction between students' existing beliefs and new ways of thinking about education. This suggests education attempting to influence teacher beliefs to be more progressive may be unsuccessful as they present information that is less consistent with students' beliefs than the information presented in more typical elementary or early childhood education courses. As a result, courses that teach progressive philosophies may have less of an influence on prospective teachers' beliefs than other courses. In support of this hypothesis, Gusky (2002) challenges the long held notion that teachers must first change their beliefs before certain changes can occur. His model suggests that in order for

teachers to integrate new beliefs into their existing beliefs systems, they must be given the chance to implement changes in the classroom and experience successful results. According to Gusky's model, teaching experience in a progressive educational setting may have a bigger impact on the progressiveness of teacher beliefs than teacher preparation programs do because in a teaching position, the learner is able to make these changes gradually and take the time to see results. This theory is also consistent with sociocultural theory. Teaching experience, especially in a progressive philosophy, allows the teacher to implement new ideas while concurrently working out the inconsistencies between new and existing beliefs in both the internal and in the external social environment.

Contrary to this idea, studies exist to support the notion that direct teaching experience is not necessary and teachers may adopt progressive beliefs simply by taking more courses in early childhood education (Lin, Hazareesingh, Taylor, Gorrell, & Calson, 2001; Smith, 1997; Snider & Fu, 1990). Smith (1997) looked at students who had been through general elementary education programs to compare beliefs of student teachers with only elementary education to those who had taken 24 early childhood education credits related to a constructivist philosophy. The students with the early childhood education credits and knowledge of constructivist philosophy demonstrated more developmentally appropriate beliefs both before and after student teaching.

Several recent studies have examined beliefs in teacher preparation programs that specialize in early childhood education. The majority of these studies utilize the following similar methods: 1) they measure beliefs by examining the level to which

teachers endorse DAP, 2) they compare teachers with early childhood education background to those with only elementary education background, and 3) they examine beliefs of teachers entering and leaving teacher preparations programs. DAPs are based on the latest research regarding best practices, thus DAPs typically incorporate many themes and philosophies that are more progressive (McMullen et al., 2006). These studies show some consensus that teachers of young children who have taken specific early childhood education courses have beliefs that endorse DAP more than students who have only had elementary education courses (Buchanan, Burts, Bidner, White, & Charlesworth, 1998; Cassidy & Buell, 1995; File & Gullo, 2002; Haupt, Larsen, Robinson, & Hart, 1995; Ketner, Smith, & Parnell, 1997; McMullen, 1999; Smith, 1997; Snider & Fu, 1990). Smith (1997) examined the beliefs of 35 students who took general elementary education courses during their teacher preparation program and 25 students who had completed an additional 24 credits of early childhood education courses. The early childhood education courses differed from the general education courses because they were specific to a constructivist philosophy and emphasized integrated curriculum, developmental approaches to classroom management, and play as a crucial part of development and learning for young children. Teachers with the credits in early childhood education held beliefs that endorsed developmentally appropriate practices more than general education teachers both before and after their student teaching experience.

File and Gullo (2002) compared students from early childhood education programs to elementary education programs both before and after their student teaching

experience. In concurrence with Smith's findings, File and Gullo found that the group with early childhood education classes held beliefs that were significantly more developmentally appropriate than the beliefs of teachers from the elementary education program. Another study compared teacher beliefs among groups of students enrolled in teacher preparation programs at two different colleges (Lin et al., 2001). Groups of students were formed from each college representing students beginning their teacher preparation program and students exiting the program. At the first college, the ECE program was based primarily on a constructivist perspective, where the elementary education program followed specific guidelines set by organizations in each of the content areas. Students' in the ECE program held beliefs that were far more progressive than the elementary education students' beliefs. The second college contained an elementary and an ECE program and both were based on social constructive perspectives and both made small gains in the emergence of constructivist beliefs, but the difference in gains between the ECE and elementary education groups was insignificant. These studies suggest that teachers' beliefs are affected by participating in programs based on constructivist approaches.

Based on these findings, experts in the field may conclude that Early Childhood Education is positively correlated to progressive teacher beliefs. However, upon further investigation, the methods by which these studies were carried out pose a problem for two reasons. First, most of the aforementioned studies measure teacher beliefs with a variation of the Primary Teacher Questionnaire or the Teacher Belief Scale (for a full report of these instruments, see Charlesworth, Hart, Burts, Mosley, & Fleege, 1993;

Smith, 2003). Both instruments measure teacher beliefs by asking participants to rate a set number of items on a likert scale, which represent the extent to which the item is representative of their own beliefs. Researchers have questioned the results of such instruments because teachers are likely to report beliefs that endorse DAP even if they are not characteristic of their actual beliefs (Rimm-Kaufman et al., 2006). DAP has been promoted as the current standard of best practice and teachers prefer to view themselves in a positive light within the field. Furthermore, teachers' beliefs are often subconscious thoughts, and if they report them without reflection, they may actually perceive their own beliefs to be more developmentally appropriate than they actually are. Recent attempts have been made to create an instrument that reduces this bias. The Teacher Belief Q-sort, which will be used in the current study, is one such instrument. This instrument is likely to reduce the amount of bias teachers report on their personal beliefs by forcing teachers to prioritize items on a continuum (Rimm-Kaufman et al.). With this instrument, teachers are presented with three sets of 20 items and are unable to rate more than 4 items in each set as most characteristic of their beliefs.

To summarize, extant research has found a correlation between early childhood teacher preparation programs and developmentally appropriate beliefs. Beliefs that endorse DAP may depict some level of progressive philosophy. However, when educators design courses specifically to influence prospective teachers to adopt more progressive beliefs, it proves to be a difficult feat. Furthermore, research has revealed that the beliefs teachers hold when they exit teacher preparation programs differ from the practices they use when entering the teaching profession. Simmons et al. (1999)

specifically noted a significant conflict between the child-centered beliefs first year teachers reported and the teacher-centered practices they used in the classroom. In one study, teachers expressed unhappiness with the pressure they felt by other teachers, parents, and administrators; factors that made it difficult for them to teach according to their beliefs (Stipek & Byler, 1997). It is unclear whether the beliefs teachers hold upon entering the profession are affected by experience in an educational setting that endorses developmentally appropriate and progressive practices. Studies examining teacher beliefs of experienced educators working hands-on with a progressive philosophy with or without early childhood education might yield different results than those examining teacher beliefs of teachers in traditional classrooms. Similarly, the majority of the studies discussed in this section measured beliefs as the teachers exited teacher preparation programs and entered the work force. It is unclear whether similar results would be found when more time has elapsed since the teacher's education in early childhood teacher preparation programs.

Teaching Experience

There are a sufficient number of studies that examine the relationship between teacher beliefs and education. However, few studies examine the relationship between teacher beliefs and the amount of classroom experience teachers have. In summary, studies report that more experienced teachers are likely to have traditional or conservative beliefs that favor a set curriculum for all children and teacher-directed practices, and that they are more resistant to change (Brousseau, Book, & Byers, 1988; Ghaith & Yaghi, 1997). Brousseau and colleagues examined 1,195 teachers to compare the beliefs of

teachers with more than 10 years of teaching experience, to those with less than 10 years of teaching experience, as well as students entering their student teaching internships and students at the beginning of their teacher preparation program. Their results concluded that as teachers had greater levels of experience in the classroom, they were more likely to believe that all children needed common standards and curriculum. These findings suggest that teachers with more experience are more likely to have beliefs that run counter to a progressive philosophy.

However, it is unclear whether the same results would be found if the experienced teachers were immersed in a school setting that endorsed a progressive philosophy. Gaps exist in the current research to explore how teaching experience in progressive philosophies affects the progressiveness of teacher beliefs. As previously mentioned, a negative correlation has been found between more years of teaching experience and progressive beliefs (Brousseau et al., 1988). Studies do not exist that specifically examine the effects of experience teaching in a progressive educational setting on teacher beliefs to determine whether the results are similar to studies performed in traditional educational settings.

The available studies regarding teacher beliefs and teaching experience are limited for two reasons. First, the aforementioned studies examined teachers' classroom experience in the context of traditional school environments. It is unclear whether teachers' experience in the context of an environment that explicitly endorses a progressive philosophy would have the same effect on their beliefs. Studies with this exact intent do not exist; however, some have tried to explicitly change the beliefs of

prospective teachers by designing field experiences that are likely to challenge their existing views about education. For example, McDiarmid (1990) attempted to change prospective teachers' beliefs during an early field experience by forcing them to observe real-world classrooms that would challenge more traditional teacher beliefs. He set up a course in which his students spent 4 hours observing a 3rd grade teacher use such progressive strategies such as building a learning community and allowing students to construct their own understanding of mathematical concepts. They also spent 4 hours in discussion and 10 hours in the university classroom. At the end of the field experience, even students who had acknowledged the observed teacher's ability to allow students to figure out mathematical problems on their own reported that their job as a teacher was to give children the answers. Although the author attempted to show the effects of the students' field experience on their beliefs, it is important to note that the course was designed in a way that is not representative of a field experience, but rather a college class that included field observation. The students did not have the opportunity to apply what they were observing and learning in the context of their own classrooms. This application is important given the connection to sociocultural theory. Teaching experience would have provided students with the opportunity to work through internal processes by working out the inconsistencies between their new and existing beliefs while receiving feedback as they see the results of the new practices. Likewise, teaching experience would have also provided a social context where students could discuss these practices and beliefs with others as they implemented them.

Existing studies examine students during their field experience, better known as the student teaching experience. It is difficult to decipher whether the student teaching experience is part of a prospective teachers' education or their actual teaching experience. Because the student teaching experience is a requirement of the teacher preparation program, examining this "experience" is more a measure of their education. In addition, students do not have full control of the classroom during their entire student teaching experience, and therefore cannot choose to implement methods that are representative of their beliefs. Second, the studies that include experienced versus novice teachers in their population intend to examine the effects of experience, but often education appears to be a possible lurking variable. For example, one study examined the beliefs of 24 students with an average of 0.5 years experience and 24 experienced teachers with an average of 20 years experience. The experienced teachers were able to use more comprehensive mental processing when reflecting upon their practices (Swanson, O' Connor, & Cooney, 1990). However, it was also reported that all 24 experienced teachers had the minimum of a Master's degree, where the novice teachers were just exiting their teacher preparation programs. Thus, it is difficult to determine whether it was the education or the teaching experience that was responsible for the depth of mental processing.

The present study was designed to examine how teaching experience as a lead teacher in a progressive setting affects the progressiveness of teacher beliefs in teachers with a variety of educational backgrounds. Studies have shown that the more experience teachers have, the more traditional their beliefs are (Brousseau, et. al., 1988; Ghaith & Yaghi, 1997). On one hand, perhaps experience in a progressive center would force

teachers to reflect upon their conflicting beliefs as they implement the changes in the classroom. It may be possible that new teachers have more progressive beliefs than what they are able to demonstrate in traditional classrooms. If teacher candidates were to adopt progressive beliefs during their education, this work environment would allow them to make changes and use teaching practices that align with their beliefs.

In summary, the majority of the literature describes teacher beliefs as some form of unconsciously held assumptions about teaching and learning. The most salient dimensions of the concept date back to 1959 and break beliefs into categories of “traditional” versus “progressive” (Kerlinger & Kaya, 1959). Currently, there is not much research to examine what factors might influence progressive teacher beliefs. This is important in the field of early childhood education, because progressive beliefs may correlate with more frequent DAPs in the classroom, which leads to better care and developmental outcomes for children (McMullen, 1999). While many have suggested possible influences by education and/or teacher preparation programs, no current studies have examined the influence of teaching experience specifically in a progressive childcare center on progressive teacher beliefs.

There are many inconsistencies in the literature regarding how teacher preparation programs influence teachers’ beliefs. While some suggest that teachers hold more “developmentally appropriate” beliefs when they have participated in any teacher preparation program that is ECE specific (Buchanan et al., 1998; Cassidy & Buell, 1995; File & Gullo, 2002; Haupt et al., 1995; Ketner et al., 1997; Lin et al., 2005; Smith, 1997; Snider & Fu, 1990), others report that influencing teachers to have more progressive

beliefs is difficult even when you directly teach progressive or developmentally appropriate beliefs (Bird et al, 1993; Gusky, 2002). Gusky (2002) believes that experience is more critical than the education, because teachers must have the opportunity to implement practices based on progressive philosophies and see results before they will integrate the new information with their pre-existing beliefs. This theory is also consistent with sociocultural theory, because teachers may need to be provided with the social environment in which they can work out those inconsistent beliefs.

Few studies look at the relationship between teacher beliefs and teaching experience. It has been suggested that the more experience teachers have in the classroom, the more likely they are to hold traditional beliefs (Brousseau et al., 1988; Ghaith & Yaghi, 1997). However, these studies were performed on teachers who had teaching experience in traditional classrooms. This is also consistent with sociocultural theory when you consider the external environment and social influences to which teachers have been exposed. This study examined whether teaching experience in a progressive setting would have a similar effect on teachers' progressive beliefs.

In an attempt to clarify some of the inconsistencies with the effects of education, this study looked at infant/toddler teachers' general and ECE-related college courses and courses completed in a progressive ECE teacher preparation program. This study also examined the relationship between teachers' progressive beliefs and teaching experience in a progressive center by looking at teachers' amount of experience in both progressive and non-progressive childcare centers.

Chapter 3: Methods

For decades, experts have suggested that teachers' individual belief systems affect the quality of their classroom practices. More specifically, studies have found higher levels of DAP demonstrated by teachers whose beliefs are more progressive. This study explored education in teacher preparation programs and actual teaching experience in progressive settings, two variables that may impact the degree to which teachers' beliefs are progressive. Specifically, data were collected and analyzed to look at the relationship between progressive teacher beliefs and the amount of progressive experience and education teachers report. All statistical analyses during this study were computed utilizing the Statistical Package for the Social Sciences (SPSS), a popular data analysis computer program. Specific procedures will be discussed in this chapter, including participant recruitment, data collection procedures, a description of materials used, and how data will be analyzed.

Sample

The target population included all lead infant and toddler teachers currently employed at the Child and Family Research Center (CFRC) located on campus at the University of Nevada, Reno. The CFRC was chosen as the recruitment site due to the progressive philosophy adopted by its administration. The CFRC works in conjunction with the Human Development and Family Studies Department which offers the Early Childhood Education Program at the University of Nevada, Reno. Within the CFRC, administrators, consultants, and department faculty work closely with the teachers to implement current and progressive philosophies and practices within classrooms. As

aforementioned, collaboration is a focus at the CFRC. Each infant/toddler classroom contains two full-time lead teachers who act as “co-teachers” and are encouraged to collaborate regularly about daily teaching practices and the care and education of the children. In addition, monthly “collaboration meetings” are held to give teachers the opportunities to discuss classroom topics with the teachers from other classrooms. Given the nature of this program, all participants included in this study will have some level of experience teaching infants and toddlers in a progressive childcare center that aims to promote progressive teacher beliefs.

Of the 24 possible participants, 11 chose to participate. The sample consisted of teachers who were all employed full-time at the Child and Family Research Center. All of the participants were female, 91% ($n = 10$) of the sample was Caucasian/white, and 64% ($n = 7$) were currently married. The mean age of the participants was 35.

Procedures

After obtaining approval by the IRB (Institutional Review Board), the researcher attended a staff collaboration meeting and explained the study to all infant and toddler teachers. The teachers were given a letter that also explained the study with an approved consent form to sign should they choose to participate. The researcher emphasized that participation was not mandatory and supervisors were not made aware of which teachers chose to participate. It was also clarified that supervisors would not have access to any information collected by the researcher. The researcher then collected forms from participants who consented that evening. Participants were given 1 week from the date of

the collaboration meeting to turn in their consent forms. This could be done confidentially by returning them to the principle investigator's mailbox.

Approximately one week after the researcher attended the teacher collaboration meeting, the researcher provided a packet to participants containing the teacher survey, directions for completing the online TBQ and an identification number which was used to log into the Q-sort, and a letter of appreciation for participating in the study. In addition, a return envelope was given to the teachers so that the teacher survey could be sealed immediately following completion. The deadline for completing the survey and the TBQ was 2 weeks after the packets were handed out, and this was clearly stated on the letter of appreciation included in the packets. A reminder letter was delivered to participants 1 week prior to this date. A folder for collecting completed packets was located at the CFRC, and the researcher returned to the CFRC to pick up this folder on the date the surveys were due. The researcher stored the consent forms, identifying information for the TBQ, teacher surveys, and any other identifying information in a locked filing cabinet located in the researcher's office.

Instruments

Data were collected using 2 instruments: a teacher survey and the TBQ. The teacher survey included specific items related to the participant's educational attainment and childcare experience, including prior employment. The Teacher Belief Q-sort (TBQ) was completed to measure the level to which beliefs were progressive. These materials will be discussed in more detail below.

Teacher Survey. This survey included basic demographic information about the teachers such as marital status, year of birth, and ethnicity. This survey also included information regarding the level of formal educational attainment teachers had received. Teachers disclosed what college(s) they received their degrees from if they were in Early Childhood Education and/or Child Development. In addition, this survey asked how many months of experience teachers had at the CFRC as well as how many months of experience they had teaching in childcare centers other than the CFRC.

Teacher Belief Q-Sort (TBQ). Each participant received directions to log in and complete an online version of the TBQ. The TBQ is defined as “a measure of teachers’ priorities in relation to disciplinary practices, teaching practices, and beliefs about children” (Rimm-Kaufman et al., 2006). The TBQ contains a total of 60 items that are divided equally into three categories: discipline and behavior management, teaching practices, and beliefs about children. Within each category, there are 20 items that teachers will sort based on a continuum of how much the item is characteristic of his or her beliefs. On one extreme of the continuum is “even less characteristic of my beliefs” and on the other extreme is “even more characteristic of my beliefs.” This instrument differs from other instruments used to measure teacher beliefs because the teachers must place only 4 items in each of the 5 categories, forcing them to prioritize their beliefs. Thus, the TBQ can yield precise measures of teacher beliefs because it attempts to eliminate bias as to what beliefs are desirable and undesirable in teachers (Rimm-Kaufman et al., 2006). In other instruments, teachers are able to rank each item separately; therefore, it is possible to rank all desirable beliefs higher than those that are

not desirable. The TBQ makes it impossible to rank more than 4 items as “even more characteristic” of teachers’ beliefs.

According to The Center for Advanced Study of Teaching and Learning (2008) located at the University of Virginia, the TBQ is beneficial when trying to measure change that occurs due to interventions or training. Specifically, the measure aims to understand the extent to which teacher beliefs are influenced by training and experience (Rimm-Kaufman et al., 2006). Although this study did not track changes in teacher beliefs over time, the study examined the possible relationship between teachers with greater amounts of progressive education and experience and progressive teacher beliefs.

The TBQ has been found to have high reliability and validity (Rimm-Kaufman et al., 2006; The Center for Advanced Study of Teaching and Learning, 2008). Rimm-Kaufman and colleagues (2006) established content and face validity by administering interviews to teachers who were not part of the development of the TBQ. There was high consistency between what the teachers reported in the interview, and how they felt their discussions had reflected the items on the TBQ. To establish reliability of the TBQ, the researchers had 44 teachers take the TBQ twice within a 12-month interval. In comparing their results, the researchers concluded that the correlations ranged from .50 to .95 with a mean of .71.

Data Manipulation

This study used the TBQ in a unique way and data were manipulated in order to get a score that represented the “progressiveness” of teachers’ beliefs. The TBQ does not identify beliefs that are thought to be more or less progressive. The researcher first

obtained TBQ results from four faculty members considered to be “experts” in the field of Early Childhood Education, primarily with regard to progressive teaching methods. Instead of completing the TBQ to measure their own beliefs, the experts completed the TBQ to represent hypothetical beliefs of a teacher who holds the highest level of progressive beliefs. The items that at least 3 experts independently identified as “more characteristic” (3) or “most characteristic” (4) of progressive beliefs were included in an exemplar TBQ. The items were then given a value based on the mean of the 4 ratings. For example, if an item was independently scored by the experts as 3, 4, 4, and 3, this item would be worth 3.5 points on the exemplar. The total exemplar score for “progressiveness” was 70.75. The sum of the exemplar items on each participant’s TBQ were computed to derive a progressive score for each individual teacher.

Data Analysis

This study looked at the effects of the independent variables (i.e. formal education and teaching experience) on the dependent variable (i.e. the degree to which teacher beliefs are more or less progressive). Specifically, the following data analysis procedures were carried out to analyze the research questions.

Research Question #1. Will there be a positive correlation between the reported months of experience teaching at the Child and Family Research Center and teachers’ progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson correlation was used to analyze the relationship between the months of experience working at the Child and Family Research Center and the progressiveness of teachers’ beliefs.

Research Question #2. Will there be a negative correlation between the reported months of experience teaching outside of the Child and Family Research Center and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson correlation was used to analyze the relationship between the months of experience working as a teacher outside of the Child and Family Research Center and the progressiveness of teachers' beliefs.

Research Question #3. Will there be a positive correlation between the reported number of general college credits and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson correlation was used to analyze the relationship between the number of college credits subjects have completed and the progressiveness of teachers' beliefs.

Research Question #4. Will there be a positive correlation between the reported number of ECE-related credits and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson correlation was used to analyze the relationship between the number of college credits subjects report having completed that are ECE related and the progressiveness of teachers' beliefs.

Research Question #5. Will there be a positive correlation between the reported number of credits earned through the Early Childhood Education program at UNR and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson correlation was used to analyze the relationship between the number of college credits subjects report having completed in the Early Childhood teacher preparation program and the progressiveness of teachers' beliefs.

Research Question #6. Will there be a negative correlation between the reported number of ECE-related credits from colleges outside of the Early Childhood Education program at UNR and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson correlation was used to analyze the relationship between the number of college credits subjects report having completed outside of UNR's teacher preparation program in Early Childhood education and the progressiveness of teachers' beliefs.

Assumptions

The researcher assumed that all self-reported answers on the teacher survey are honest and accurate and that participants completed the TBQ honestly, so that the TBQ results portrayed beliefs that were representative of teachers' actual belief systems.

Teachers' beliefs have been linked to their actual practices demonstrated in the classroom (Stipek & Byler, 1997; McMullen, 1999; McMullen et al., 2006). Likewise, the theoretical framework used in this study supports the notion that behavior is driven by attitudes and beliefs. Studies finding inconsistency between reported beliefs and actual practices theorize that this could be due to parental and administrative pressure placed on the teacher to implement practices that are not congruent with their beliefs (Stipek & Byler, 1997). This study assumed that the beliefs teachers hold about children, teaching, and learning will affect their classroom practices.

This study measured progressive beliefs in a childcare center where progressive practices are required; therefore decreasing the possibility that administrative pressure would interfere between teachers' progressive beliefs and their progressive practices. Likewise, due to the academic nature of the population of parents at the CFRC, teachers are not likely to be met with resistance by parents as they implement a progressive philosophy.

The TBQ, which was used to measure the progressiveness of teachers' beliefs, is designed to measure beliefs of teachers of elementary-aged children. This study assumed that teachers' belief systems are stable regardless of the age group of the children they were currently teaching. To clarify, teachers have one broad belief system, and this belief system is assumed to influence teachers' practices in the classroom, even when practices differ depending on the age group of the children. For example, one of the items on the TBQ states that "When students are engaged in interesting problems and challenging activities, they tend to have very few discipline problems." Assuming this is extremely characteristic of a teacher's belief system, this belief may influence an elementary school teacher to get the children in small groups and give them some hands-on math problems to work out together. The same teacher, in an infant/toddler setting, may frequently provide new materials for exploration rather than relying on more traditional baby toys.

This study also assumed in research questions numbers 5 and 6 that teacher preparation programs at other institutions are not progressive. This assumption may or may not be accurate, due to the researcher's inability to measure the progressiveness of every teacher preparation program from which a participant reported earning credits.

Chapter 4: Results

The purpose of this study was to explore two relationships. First, this study explored the relationship between infant and toddler teachers' progressive beliefs and the amount of past teaching experience they reported in other childcare centers. Second, this study explored the relationship between teachers' progressive beliefs and the amount, subject, and type of formal college education teachers reported completing. This chapter will present the results of the research questions previously proposed. The chapter will begin by presenting descriptive statistics of the variables of interest and their interaction with demographic features of the sample.

Descriptive Statistics of Variables of Interest

Several variables regarding participants' formal education and work experience were quantified in order to answer the research questions posed in this study. Before looking at relationships between the variables of interest, the researcher looked at each variable separately. This section will discuss the descriptive statistics of the variables of interest. First, data pertaining to the amount of experience the sample reported at various childcare centers will be presented. Next, data pertaining to the amount of formal education participants reported in various college settings will be presented. Table 1 portrays these data in more detail. The following sections will highlight some of the essential results.

Experience in Various Childcare Centers. As shown in Table 1, participants reported a mean of 13.6 years of experience working in childcare settings. Of this experience, an average of 9.1 years was spent working primarily with infants and/or

toddlers, an average of 4.8 years was spent employed at the CFRC, and an average of 8.5 years was spent in childcare settings that are not part of the CFRC. Thirty-six percent of the sample reported working in at least 3 different childcare centers while 18% had never worked at another childcare center other than the CFRC.

Formal Education in Various Settings. As shown in Table 1, all of the participants ($n = 11$), had at least 36 credits of formal college education, with a mean of 115.6 credits. Seventy-three percent ($n = 8$) of the sample held a 4-year degree. The mean number of credits specifically related to early childhood education was 51.6, and of these credits, a mean of 19.4 were earned at the University of Nevada Reno and a mean of 26.6 were earned at other institutions. Of the participants, 63.6% ($n = 7$) had not received any early childhood education credits from the University of Nevada. Reno.

Table 1

Formal Education and Childcare Experience by Type

	Mean	Minimum	Maximum	SD
<i>Experience (in years)</i>				
All	13.6	2.7	32	10.4
Infant/Toddler	9.1	2.1	22.6	7.9
CFRC	4.8	1	19.4	5.1
Other	8.5	0	20	7.1
<i>Education (in credits)</i>				
General	115.6	36	166	45.6
ECE	51.6	3	120	35.3
ECE-UNR	19.4	0	100	34.5
ECE-Other	26.6	0	120	36.6

Interactions between Variables of Interest and Demographic Variables

Significant correlations were found between demographic variables and the education and experience variables that did not pertain to the research questions of this study. Several relationships existed with age, as shown in Table 2. There was a significant positive correlation between age and the reported amount of experience working in childcare centers ($r = .847, p = .001$). This is also true for the relationship between their age and the amount of experience they have in childcare centers not part of the Child and Family Research Center ($r = .843, p = .001$) and for the relationship between their age and the amount of experience with infants and/or toddlers ($r = .900, p = .000$). There was also a significant negative correlation ($r = -.624, p = .040$) between participants' age and number of college credits. A more specific correlation between education and experience revealed that the more early childhood education credits teachers had received at the University of Nevada Reno, the less experience they had at centers other than the Child and Family Research Center ($r = -.727, p = .011$).

Table 2

Age, Experience, and Education of the Sample Population.

	Age	Experience	Education
Mean	35	13.6	115.6
Median	29	10	128
Mode	24, 28	n/a*	128

*Each value was only reported once.

Research Question Findings

To explore the relationship between teachers' progressive beliefs and several specific variables relating to teachers' work experience and education, six research questions were originally posed in this study. The results from the analysis of each research question will be discussed in turn.

Research Question #1. Will there be a positive correlation between the reported months of experience teaching at the Child and Family Research Center and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson product moment correlation analysis did not reveal a significant correlation between the months of experience working at the Child and Family Research Center and the progressiveness of teachers' beliefs ($r = .228, p = .501$).

Research Question #2. Will there be a negative correlation between the reported months of experience teaching outside of the Child and Family Research Center and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson product moment correlation analysis did not reveal a significant correlation between the months of experience working at childcare centers other than the Child and Family Research Center and the progressiveness of teachers' beliefs ($r = -.247, p = .464$).

Research Question #3. Will there be a positive correlation between the reported number of general college credits and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson product moment correlation analysis did not reveal a significant correlation between the reported number of general college credits and the progressiveness of teachers' beliefs ($r = -.248, p = .463$).

Research Question #4. Will there be a positive correlation between the reported number of ECE-related credits and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson product moment correlation analysis did not reveal a significant correlation between the reported number of ECE-related credits and the progressiveness of teachers' beliefs ($r = -.185, p = .586$).

Research Question #5. Will there be a positive correlation between the reported number of credits earned through the Early Childhood Education program at UNR and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson product moment correlation analysis did not reveal a significant correlation between the reported number of credits earned through the Early Childhood Education program at UNR and the progressiveness of teachers' beliefs ($r = .059, p = .864$).

Research Question #6. Will there be a negative correlation between the reported number of ECE-related credits from colleges outside of the Early Childhood Education program at UNR and teachers' progressive beliefs, as measured by the Teacher Belief Q-sort (TBQ)?

A Pearson product moment correlation analysis did not reveal a significant correlation between reported number of ECE-related credits from colleges outside of the Early Childhood Education program at UNR and the progressiveness of teachers' beliefs ($r = -.013, p = .969$).

Additional Analyses

To further examine the relationships that were explored, the researcher ran Chi-Square tests. Nominal variables were created using the median for each variable of interest. For example, the median score for the variable "level of progressiveness" was 60. Thus, those participants who were identified as having a score of less than 60 were coded as "1" and those who were identified as having a score of equal to or more than 60 were coded as "2." The tests revealed no significant relationships to further explain research questions 1 and 2, which pertained to the work experience and the progressive beliefs, or for questions 3 through 5, which pertained to the amount, type, and location of formal education and progressive beliefs. In regards to research question 6, the relationship between the number of Early Childhood Education credits participants had received in colleges other than the University of Nevada Reno, and the level to which their beliefs were progressive, a Chi-Square test revealed a relationship, with those teachers having more college credits tending to also have more progressive beliefs than those teachers having fewer credits ($\chi^2(1) = 4.412, p = .036$).

In summary, the methods used to analyze the research questions posed in this study yielded no significant correlations between the variables of interest. The researcher was able to run additional analyses which revealed a positive correlation between

teachers' progressive beliefs and their amount of experience in childcare centers not part of the Child and Family Research Center. In addition, there were significant correlations between demographic variables and variables of interest. These correlations, as well as the lack of expected correlations will be further discussed in chapter 5.

Chapter 5: Discussion

The purpose of this study was to explore relationships between infant and toddler teachers' progressive beliefs and teachers' levels of formal education and work experience. The analyses of the research questions did not yield significant results. There was no correlation between teachers' progressive beliefs and the amount of experience they had at the Child and Family Research Center (CFRC), a known progressive center, or at other childcare centers. No correlations were found between teachers' progressive beliefs and the amount of general education or Early Childhood Education credits they had received. However, upon further analysis, a Chi-Square test revealed a significant correlation between those Early Childhood credits earned at colleges outside of the University of Nevada Reno and progressive beliefs. This chapter will discuss these results as they relate to existing literature and Sociocultural Theory. The chapter begins by discussing interesting patterns that emerged in the demographic features of the population, then interesting interactions between those demographic variables and the variables of interest.

Demographic Features of the Sample

The researcher anticipated a small sample size as there were only 24 possible participants. However, the 45.8% response rate ($n = 11$) surprised the researcher because the CFRC is a lab-school. Teachers participate in research on a regular basis, and the researcher hypothesized that most of the teachers meeting qualifications would participate. One possible explanation for the low response rate was discovered when looking at the descriptive statistics of the demographic variables of the sample. All

participants reported having formal college education; 18% reported some college but no degree, 9% reported having a two-year degree, and surprisingly, 73% reported having a four-year degree. The mean number of college credits was 115.6. This is a highly educated group of individuals for a childcare setting. In comparison, researchers in one study collected data about the educational levels of 964 childcare workers in 4 Midwestern states, and only 22.5% reported having a Bachelors degree or higher (Torquati, Raikes, & Huddleston-Casas, 2007). One possible explanation for the high educational level of the current sample is that due to the nature of the childcare center, i.e. being that it is on a university campus and is encompassed by a culture where higher education is highly valued, the teachers may have perceived bias and judgment from the researchers. Perhaps they thought the researchers were looking to “prove” that education is more important than experience, thus making them less interested in participating. Another theory is that teachers with more education could have simply been more interested in this topic, the theory, and the results of this project.

The mean age of the sample was 34, with 55% ($n = 6$) of the participants being 29 or younger. Also relevant is the amount of experience the teachers held in childcare settings. The mean years of experience was 13.6 years in a childcare setting and 73% ($n = 8$) of the teachers reported fewer than 17 years. As shown previously in Table 2 we can conclude from these data that a majority of participants were younger, college educated teachers with a high amount of experience relative to the mean age.

There was a significant positive correlation ($r = .847, p = .001$) between the teachers' age and their years of experience in childcare centers. Although this might

sound obvious, in the context of childcare, this correlation is meaningful. According to Blau (2001), approximately one-third of child care teachers leave their jobs each year, which is 3 times the rate of other women. In the childcare profession, teacher pay is extremely low compared to teaching positions in Kindergarten through 12th grade education. In one study, among 964 childcare workers, only 3.5% earned more than \$30,000 per year, and infant caregivers averaged the lowest at \$14,470 per year. This can easily divert educated teachers away from the field, or prevent them from remaining in the field for extended periods of time. The correlations between age and years in the field of child care may mean that teachers in this sample view their job as a professional career, which may make them less likely to seek other career options.

Summary of Findings

The purpose of this study was to explore relationships between infant and toddler teachers' progressive beliefs and teachers' levels of formal education and work experience. Although the results did not reveal correlations at or below the .05 confidence interval, the direction of the relationships revealed interesting patterns that will be discussed in this section as they relate back to the literature and theory previously discussed in preceding chapters.

Progressive Beliefs and Teachers' Work Experience. The first 2 research questions explored the relationship between the level to which teachers' beliefs were progressive and the years of work experience both within and outside of the CFRC at the University of Nevada Reno. Although the results were not significant, the relationship between teachers' progressive beliefs and the amount of experience inside the Child and

Family Research Center were in the expected direction ($r = .228, p = .501$), as was the relationship between teachers' progressive beliefs and their work experience outside of the Child and Family Research Center ($r = -.247, p = .464$).

This relationship would be expected given the application of teachers' beliefs to Sociocultural Theory. According to this theory, learning takes place in social contexts such as the classrooms where teachers work and learn. The external environment must be carefully arranged to allow the learner to fully engage in those internal thinking processes that are essential if one is to change their pre-existing beliefs (John-Steiner & Mahn, 1996; Kagan, 1992). As explained in chapter 1, the faculty at the Child and Family Research Center work diligently to implement progressive practices in the classrooms. The CFRC has a program set up to allow for this social experience in learning about progressive philosophy. Teachers and supervisors have regular "teacher collaboration meetings" so that teachers can discuss the events occurring in their classrooms. Each classroom also consists of 2 full-time co-teachers, which allows them to discuss things daily. Thus, based on this theory, it makes sense that the experience at the Child and Family Research Center would influence teachers to think more progressively. On the contrary, the experience teachers had at other childcare centers may not have provided this opportunity, thus making existing traditional beliefs more salient.

Gusky (2002) challenges the notion that formal education alone is enough to change teacher beliefs. He hypothesizes that teachers must learn progressive strategies, and then be presented with the opportunity to integrate them into the classroom and see successful results before those strategies are adopted into the schema of teaching

practices. Teachers at the CFRC have the opportunity to integrate progressive philosophies into their own classroom and/or witness other teachers doing so. They also have the opportunity to discuss the results with other teachers and faculty members, which further encourages the integration of new and existing knowledge.

Progressive Beliefs and Teachers' Formal Education. Research questions 3 through 6 explored the relationship between teachers' progressive beliefs and their formal college education. An interesting pattern emerged. Previous research suggests that formal education, regardless of the field of study, may influence teachers' beliefs, making them more progressive (Buchanan et al., 1998; Cassidy & Buell, 1995; File & Gullo, 1995; Haupt et al., 1995; Smith, 1997; Snider & Fu, 1990). More specifically, college classes that are directly related to Early Childhood Education have been found to result in more progressive teacher beliefs (Lin et al., 2001; Smith, 1997; Snider & Fu, 1990). The direction of the relationship between teachers' progressive beliefs and general education ($r = -.248, p = .463$) is not consistent with this research and neither is the relationship between teachers' progressive beliefs and Early Childhood Education related credits ($r = -.185, p = .586$). However, conflicting studies have found that in order for progressive beliefs to emerge or be strengthened, students must receive education that purposefully teaches those progressive philosophies (File & Gullo, 2002; Lin et al., 2001; McMullen et al., 2006; Smith, 1997). Researchers theorize that in order to change teachers' beliefs, college courses must allow students to reflect upon their beliefs as they learn and integrate new information (Bird et al., 1993; Smith, 1997). A program at UNR purposefully encourages future teachers to have this opportunity which may increase the

likelihood that education would produce some level of change in the beliefs of students. Thus, the researcher expected to find a positive correlation between teachers' progressive beliefs and the number of ECE credits earned at UNR. The data from this study were not sufficient enough to establish a relationship between teachers' progressive beliefs and their Early Childhood Education credits earned at UNR ($r = .059, p = .864$). Many of the ECE courses at UNR are designed to teach students progressive philosophy and allow them time to work through any conflicting beliefs they hold prior to the course, however, data was not collected to show whether participants had taken any specific courses, or how long ago credits were earned. The specific courses and the dates credits were earned from UNR may have been helpful in understanding whether current ECE courses are successful in influencing more progressive beliefs. The data were insufficient to report a relationship between teachers' progressive beliefs and their amount of Early Childhood Education credits earned outside of the University of Nevada Reno ($r = -.013, p = .969$). However, upon further analysis, a Chi Square revealed a relationship between teachers' progressive beliefs and their ECE credits earned outside of UNR. The researcher was surprised to find this relationship. It is possible that some college credits students received outside of UNR could have taught progressive strategies, but this study did not collect data to determine whether this was the case. It is also possible that teachers who reported more credits outside of UNR also had more credits in general. The results of these research questions are highly limited by the small sample size ($n = 11$), which may also explain the lack of correlations between beliefs and the education within and outside of UNR.

The results can also be elucidated using sociocultural theory. Vygotsky (1997) termed the college experience “re-education” to more accurately portray the internal processes that took place in the college setting. Future teachers come into a college program with pre-existing knowledge about teaching. New information is not “learned,” but is integrated into existing knowledge. Thus, any progressive philosophies being taught in a college setting are not likely to be adopted without providing students with the opportunity to reflect upon these different, and often times conflicting, philosophies. The program at UNR is known to allow for this reflection in many of its classes. For example, students in the program write a “philosophy of education” paper and revise it several times throughout their time in the program. If other colleges attended by the participants in this study were not using and teaching progressive philosophies, or were teaching them progressive philosophies but not setting up a learning environment that encouraged the internal process of learning to occur, a negative correlation would be expected to occur. Furthermore, if teachers were to receive credits from colleges who were not teaching progressive philosophies, but teachings were instead based on more traditional philosophies salient in our society, this would only strengthen those existing beliefs, thus making it that much more difficult to change a person’s beliefs. However, without looking at the complex learning processes during these educational experiences, the results may not portray whether the credits taken in at UNR or outside of UNR affected progressive beliefs in either direction.

Implications for further research and practice

The results of this study are not conclusive enough to apply to current practices. However, a very small body of literature has attempted to study the beliefs of teachers who are working in infant and/or toddler classrooms. This study raised awareness about topics otherwise neglected in the research, added many valuable ideas and concepts to the field, and posed some interesting questions to guide further research.

This study raised awareness of the importance of studying infant and toddler teachers' beliefs. Beliefs have been studied for decades in pre-K through college-level classrooms, but the importance of looking at infant and toddler teachers' beliefs is often a neglected topic. This study discussed the dramatically rising rates of infants and toddlers cared for in center-based care, as well as the importance in this stage of child development to later outcomes. Perhaps focusing solely on beliefs of infant and toddler teachers will spark interest in further explorations of relationships between beliefs, education, experience, and eventually practice.

This study also added many valuable ideas as it applied the sociocultural theory to the learning environment that teachers and students learn and work in. This provided 2 major benefits for further research. First, sociocultural theory was used in concurrence with current literature to explain possible relationships between teacher beliefs and education and work experience. This provided a deeper depiction of formal education and work experiences as internal and external learning processes, occurring in unique and unpredictable ways to influence individual teachers' beliefs.

Second, the application of sociocultural theory provided a framework from which to better understand how the learning environments established for current and future

teachers could impact how and what they learn. If larger studies reveal similar but more compelling results than presented in this study, formal education and work experiences could be modified to purposefully alter teachers' beliefs in a progressive direction. Formal education could encourage the evaluation of existing personal beliefs and the integration of new philosophy by working out conflicting beliefs. Work experience could allow for more teacher interactions, group work, reflective practice, and flexibility to integrate new philosophies on a "trial" basis.

The questions presented in this study may be used to guide further research. The relationships explored between beliefs, education, and experience may create several interesting research questions. Further studies could attempt to explore the actual effects of education and experience on teachers' beliefs. It would be interesting to conduct a study in which you could conclude which one was more successful in changing teachers' belief to reflect more progressive philosophy.

Limitations and Suggestions for Future Research

This study reflected an exploratory purpose. The results of this study did not show significant correlations between infant/toddler teachers' beliefs and their work experience and/or formal education. However, if the study were to be replicated to some degree, addressing certain limitations, it is likely that significant correlations may be discovered.

Larger Sample Size. The small size of the sample ($n = 11$) was a substantial limitation to the results, and the researcher reports the findings with caution. As discussed previously in this chapter, the majority of participants were young and educated Caucasian females. The fact that teachers who possibly possessed several years of

experience but no education were not included in the study may be a limitation to the findings. Conducting the study on a larger scale would have 2 major benefits to the research. First, the sample would include more variability in the amount and types of education and work experience they possess. With more variance in the variables of interest, the results could have revealed different correlations than what this study found. The researcher also felt that using a multiple regression analysis would have been beneficial to better understand the interactions between the variables of interest. All of the participants reported having both formal education and experience in the classroom. It is likely that both were affecting participant's beliefs in different ways simultaneously. A multiple regression analysis would allow the researcher to look at the effects of both education and experience on teachers' progressive beliefs while controlling for the other variable. A multiple regression analysis could not be used given the sample size of this study ($n = 11$). A larger sample size that included teachers from various types of childcare centers (e.g. private centers, government programs, community college centers, etc.) would be more likely to produce significant results. To better understand the relationships between the variables in this study, the sample would have ideally been more heterogeneous, especially relating to the level of education and the years of childcare experience the participants reported.

This study is limited to teachers at the Child and Family Research Center located at the University of Nevada, Reno and is not generalizable to any other population of infant and toddler teachers.

Qualitative Studies. This study was limited because data were not collected regarding the colleges teachers received credits from, or the childcare centers they reported working in that were not part of UNR. The researcher knew that the CFRC and the ECE program at UNR both used and taught progressive philosophies. However, several variables explored in this study's research questions measured variables regarding the education and experience participants had obtained outside of UNR. Collecting data about the level of progressiveness in these settings would have increased the validity of the results. Qualitative studies including interviews would allow researchers to find out more about the level of progressiveness in the various types of formal education and work experience participants report, thus further explaining the relationships of this study.

The researcher in this study measured teacher beliefs using the Teacher Belief Q-sort. Teachers' beliefs were quantified into a number that represented the level to which their beliefs were progressive. While this instrument was helpful in this study, using it concurrently with qualitative data collection procedures would allow researchers to get a better understanding of the complex and philosophical beliefs the teachers hold.

Case Studies. This study attempted to explore how education and experience may affect the degree to which teachers' beliefs are progressive. However, upon the application of the Sociocultural Theory, the researcher became aware of a major limitation to finding "effects." Sociocultural Theory and the current research on teacher beliefs concur that learning is a personal experience. Not surprisingly, this study found that teachers could report similar amounts and types of education and experience with

progressive beliefs and environments, yet hold very different degrees of progressive beliefs. The methods used in this study were not adequate in addressing personal experiences, which may help explain the lack of significant correlations found in this study. Looking at case studies would be beneficial as they would allow the researcher to understand each participant's experience as he/she became more educated and/or gained more experience teaching in infant and toddler classrooms. These personal learning stories may explain the relationships between beliefs, education, and experience at a deeper level.

Longitudinal Studies. This study explored relationships between progressive beliefs, education, and work experience at one point in time. This method was adequate to reflect the exploratory nature. However, the evolution of belief systems is a complex process, and teachers' beliefs are constantly changing. Due to the limitations of this study, conclusions cannot be made regarding changes that took place in teachers' beliefs as a result of education or experience. Longitudinal studies would allow a research design that yielded results better aligned with Sociocultural Theory. Control groups could be established along with experimental groups entering different childcare environments and teacher preparation programs. Collecting data on participants' beliefs at the beginning and end of a study, and several times throughout participants' college education and work experiences, would allow the researcher to look at how each individual teacher's beliefs actually changed. The researcher would be able to measure pre-existing beliefs and the level to which different environments encouraged students to reflect upon those beliefs as they integrated new ideas and practices into their schemas. Pairing such data with results

similar to those found in this study would provide a glimpse into the literal interaction between teacher beliefs and levels of education and experience in the classroom.

Other Limitations. Participation in this study was completely voluntary which may have caused the possibility of a self-selection bias. It is possible that teachers with less progressive beliefs will chose not to participate.

The TBQ relies on careful, time-consuming, and honest work from the participants. There is no guarantee that participants provided a Q-sort that is completely representative of their actual beliefs. Simply knowing that the researcher was studying progressive philosophies and quality care may have altered the way that teachers sorted the items during the Q-sort. The measure did attempt to control for this by forcing participants to choose certain items over others. Participants had to prioritize their beliefs, thus eliminating the possibility of categorizing all the progressive items as being characteristic of their beliefs.

Conclusion

This study explored possible relationships between teachers' progressive beliefs and various forms of formal education and work experience they reported. Although the results did not reveal significant correlations among the variables of interests, this study provided more insight into the way that education and experience are likely to affect teachers' progressive beliefs. Using the application of Sociocultural Theory, this study depicted a meaningful framework from which to better understand the formation and evolution of teacher beliefs during experiences in educational and child care settings. This framework has led to several suggestions for future research regarding the

relationships explored in this study, and the researcher is confident that further studies could eventually elicit results that change the way we think about learning environments, both in the childcare and the college classroom.

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