Making the classroom space authentic:
How two prekindergarten teachers conceptualize, identify, and enact the Funds of Knowledge framework

By

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Dedication

For Cleveland Wilson,
who taught me the most
about what it means to teach.

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Abbreviations

4K	Four-year-old Kindergarten
4KPD	Four-year-old Kindergarten Professional Development
AR	Action Research Project
CLASS	Classroom Assessment Scoring System
CR	Conference Reflection
EC	Early Childhood
ECCE	Early Child Care and Education
ECE	Early Childhood Education
ELS	Early Learning Sessions
FMNR	Family Math Night Reflection
FoK	Funds of Knowledge
HVR	Home Visit Reflection
IRB	International Review Board
LS.Int	Learning Story Interview
LS.Obs	Learning Story Observation
MPS	Milwaukee Public Schools
preK	prekindergarten
PD	Professional Development

Abstract

I present a descriptive, comparative case study of how two preschool teachers conceptualize and enact funds of knowledge. I explore how Sadie and Shelly understand (make meaning) and implement a FoK framework to assist children in mediating their social and cultural resources across the contexts of home and school. I address the need for teachers to conduct ethnographic home visits and the use of observation and socialization within the classroom to gain insight on children's home cultural and social practices. I document how a FoK approach to curriculum and pedagogy enables teachers to meet the needs of culturally diverse children in early childhood education and effectively scaffold learning.

Findings highlight the teachers' use of personal and professional knowledge as well as their views of culture informed their understanding of the framework. Sadie and Shelly possessed sociocultural perspectives toward pedagogy and curriculum decisions, which reflects the theoretical foundation of the FoK framework. This framing shaped their approach and relationship building with families through ethnographic home visits and led to a deeper understanding of the social networks and cultural influences present in children's daily lives.

In addition to ethnographic home visit observations, Sadie and Shelly used the context of the classroom to observe and identify children's FoK. In play-based interactions with children, Sadie and Shelly made decisions that drew from their multifaceted pedagogical content knowledge. Both EC theory and development along with subject content were instrumental to their improvisational reactions to the children's mediated FoK in play. Furthermore, they supported children to mediate their FoK across contexts through verbal interactions and the design of the classroom space.

Deliberately and explicitly using the knowledge that children bring with them as a springboard lessens the need for children to have to work so hard to re-contextualize the information being learned at school. It can help them to make connections between the home cultural knowledge and the school knowledge, thus supporting the acquisition of school knowledge, without delegitimizing their home cultural resources. This could potentially lead to a stronger association between the student and school.

Chapter One Introduction

1.1 Rationale for the Proposed Study

With the changing demographics in the United States, teachers face the challenge to teach children and support families from varying backgrounds (NAEYC, 2009; NCATE, 2005). Despite the increasingly linguistically, ethnically, racially, and culturally diverse student population, a majority of teachers, especially in early childhood education [ECE] continue to be middle-class European American women. Consequently, children from backgrounds that differ than the dominant culture tend to be viewed as being disadvantaged and often deemed "at risk". In addition, teachers often lack the training to incorporate cultural backgrounds of students into curriculum and learning opportunities (Graue, 2005). To challenge these misconceptions of children and families, teachers today must have an awareness of the cultural differences that exist between them and their students and understand that young children exist within multiple contexts. They use this cultural competency to create developmentally and responsive learning experiences.

One response is for early childhood teachers to know children as learners across different contexts by employing the conceptual framework of *Funds of Knowledge* (González, Moll, & Amanti, 2005). Funds of knowledge [FoK] refer to the "historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being" (Moll, Amanti, Neff, & González, 1992, p. 133). This perspective views everyday language, experiences and activities for household survival as foundational and part of one's knowledge construction. A growing body of evidence suggests the framework as an approach aimed to counter deficit perspectives and provide culturally responsive learning experiences for all children (Hogg, 2011; Rodriguez, 2013).

Case study research provides examples of how teachers draw on children's lives and interests outside of school to design learning experiences (Andrews & Yee, 2006; Hedges, 2011). This is a powerful way to disrupt deficit perspectives and challenges didactic schooling practices with young children. Constraints on teachers, such as difficulties implementing research-based practices (Vesay, 2008) or lack of teacher agency (Kuh, 2012), can be burdensome and adding a new framework and approach to designing culturally responsive curriculum may be difficult to adopt.

> Indeed, combating the persistence of cultural deficit-based explanatory models in education requires [a] sort of multilayered development of consciousness regarding power and agency to more fully realize the vast potential that counter-hegemonic theory and practice, such as the Funds of Knowledge approach, truly represents (Rodriguez, 2013, p. 116)

Though barriers exist for teachers to fully embrace the FoK framework, examining previous work provides insight in how teachers can avoid pitfalls and challenges when enacting children's FoK into curriculum (González, Wyman, & O'Connor, 2011; Oughton, 2010). For this reason, I am interested in examining how teachers use various contexts to make sense of and incorporate children's home practices and cultural resources into learning experiences at school.

In my dissertation study, I examine how two early childhood teachers conceptualize and implement the *funds of knowledge* framework to assist children in exchanging their social and cultural resources across the contexts of home and school. I explore how teachers use both ethnographic home visits and classroom context to identify and make sense of children's FoK. In addition, I sought to learn how teachers enacted this conceptual framework in regard to mathematics in their classrooms.

1.2 Background

A rise in national attention for the need for publicly funded prekindergarten [preK] has increased access to programs across the United States. In the 2012-2013 school year, 41% percent of all American four-year-olds were enrolled in state-funded preschool and Head Start programs across 40 states and the District of Columbia (Barnett, Carolan, Squires, & Clarke Brown, 2013). For many families, state-funded preschool programs are the only affordable option (Children's Defense Fund, 2014). Although the reported enrollment in national and state funded early childhood education programs remains steady, questions of equity of access and quality endure. Of the states offering supported programs, only 16 of them met all ten measures of quality benchmarks in 2011-2012 (Barnett, et al., 2013). For the 80% percent of children not enrolled in state funded programs, access is a priority (National Research Council [NRC], 2000).

Wisconsin's long history of commitment to public education of four-year-old children dates back to the state's constitution (Belfield & Winters, 2004). Now ranked as one of the top five states in regard to access to preK, Wisconsin enrolled 64% percent of four-year-olds in state funded preschool during the 2012-2013 school year (Barnett, et al., 2013). This influx of enrollment happened as results of more school districts around the state offering schooling to four-year-olds. State-wide access to programming conversely influenced school districts to explore options to implement preschool initiatives.

Following years of debate over universal preschool, which included a well-received piloted program, a large urban city's school district implemented a new four-year-old kindergarten [4K] initiative. Beginning in the 2011-2012 school year, the Cappitown[1] school district offered a state-funded, tuition-free, play-based preschool program. This initiative

[1] All names are pseudonyms.

provided a significant number of children access to public preK programs that are play-based, developmentally appropriate, and align with state early learning standards.

The school district's initiative included half-day preK programs housed in twenty-four elementary school and twenty-six early child care and education [ECCE] sites. The district's sites were scattered across the city and served over 2,000 four-year-olds. The ECCE sites included community-based, corporate, Head Start, non-profit, and private child care locations. All elementary school locations offered two sessions per day that last three hours. The ECCE sites varied in programming; some offer two 3-hour sessions, others offer one per day, and some offered optional wrap-around care for enrolled students. Wrap around care is a fee-based service for families to enroll their children in before and/or after preK child care. Regardless of where the program was housed, the district initiative provided support staff (educational assistants) in the classroom and students attended preK Tuesday-Friday. This left Monday as a non-mandatory attendance day for four-year-old children. For teachers at elementary school sites, this day was used as a planning and professional development (PD) day. For teachers in ECCE locations, administrative decisions were made on how to best use this day. Some ECCE sites opted to offer regular, fee-based child care services for four-year-olds.

Though the school district provided funding to every site, it did not regulate the hiring of preK teaching staff. The state's Department of Public Instruction required all preK teachers to have a bachelor's degree and teaching license. All preK teachers in elementary school sites were hired and paid salaries by the Cappitown school district. The ECCE sites were free to hire and pay their teachers, which naturally resulted in varying salaries. Similarly, ECCE sites were given the option to retain their curricula and assessment systems or adopt the district's choice of the Creative Curriculum program (Copley, Jones & Dighe, 2010). PreK classrooms nested in

elementary schools were required to implement the Creative Curriculum program. Both site locations were required to conduct district-regulated assessment and reporting systems.

Though many children attended 4K in their neighborhood schools, this was not always the case. Sometimes, the closest school did not have space for 4K. In other cases, families wanted children to attend a site closer to parental workplaces or to child care. In those situations 4K did not serve as an introduction to the school they would attend for elementary years and they might be separated from older siblings. Regardless of reason, it is important to note that this speaks to equity issues of access for preschool programming. Factors such as transportation, socio-economic status, locality, and social and cultural knowledge of the system influenced a families' access to and choice of programming.

1.2.1 Professional Development

The Cappitown school district provides PD to all their staff and preK teachers were no exception. Two main types of support were offered: a summer institute over three days and once-monthly PD days held consistently on Mondays. Topics ranged from general matters in early childhood education to specific sessions about aspects of the Creative Curriculum and district assessments. At the monthly PD, teachers decided which session best fit their needs and interests.

PreK teachers in the elementary schools had the opportunity to attend the monthly PD sessions because they did not have students on Monday. ECCE sites did not necessarily have Mondays off. For some teachers this meant they had children on Mondays though it was not considered a "preK day". To attend the PD sessions or have the entire day devoted to planning, these teachers required coverage of their classrooms.

1.2.2 Four-year-old Kindergarten Professional Development [4KPD]

In addition to the district PD, a four-year-old kindergarten professional development [4KPD] program collaboratively funded by the National Science Foundation (NSF), the local University, and school district was offered to preK teachers in the Cappitown school district. The 4KPD was designed to promote culturally and developmentally responsive and early mathematics teaching with a group of public preK teachers. Teachers enrolled in the 4KPD studied early childhood theory and developmentally appropriate practice [DAP] (Copple & Bredekamp, 2009), developed an understanding of FoK (González, et al., 2005), and learned ways to engage children in high quality mathematics focused on early counting and number.

A distinctive element in the design was to create a hybrid of PD sessions and graduate level courses. In this model, teachers enrolled in four semesters of course work with their tuition paid by the project. The 4KPD enrolled three cohorts of teachers to deepen their knowledge and expertise by interacting on an ongoing basis. For the most part, the 4KPD met weekly for two and a half hours to discuss readings and engage in activities that drew from and extended their knowledge. In-class activities were structured to build on the content of the readings and promoted reflections about how young children learned mathematics in multiple contexts. The course discussions were often structured with specific guiding questions yet allowed opportunities for the teachers to share information with one another and build community.

To aid in the sense making of the multifaceted FoK framework, each teacher enrolled in the 4KPD program worked with a focal child to complete reflections and course assignments. Teachers selected a focal child from their classroom who was different from them in at least two dimensions: dis/ability, race, language, socioeconomic status, family structure, and gender. Each teacher conducted ethnographic home visits (González, et al., 2005) with the child's family to

focus on counting, number skills and the family resources that contributed to these skills. Teachers also completed math assessment assignments by observing and interviewing their focal child during the school day. The PD seminars included time for the teachers to discuss their focal child and what they had observed about the child's math skills and FoK.

The teachers wrote reflections of the focal child home visit experience, math assessment interviews and observations (i.e. Learning Stories (Carr & Lee, 2012)), and family math night activities. All of these assignments challenged teachers to analyze the focal child's development over the course of the school year, observe family home practices and view the household as a rich space of learning mathematics, and create activities for the classroom that built on these rich home resources.

The fourth course of the PD program explicitly focused on action research for developmentally and culturally responsive early mathematics. Each teacher in the course designed an action research project that incorporated their focal child's FoK and developed math skills such as counting or number. Through scaffolded assistance, teachers actively participated in the design and implementation of their action research project (Castle, 2012; Perry, Henderson, & Meier, 2012). They gathered literature support, analyzed the data collected, and produced a paper suggesting findings from their projects. The action research project showcased how teachers used the FoK framework to understand and incorporate their focal child's historically and culturally acquired household practices with mathematical learning opportunities in the classroom.

Chapter Two Literature Review

2.1 Introduction

Consistent with the foundational work of FoK, I draw on Lev Vygotsky's sociocultural theory as an analytical frame for this study. This theory supports my thinking about how the social interactions between people, symbols, or the environment impact teachers' curricular and pedagogical decision making. It also allows me to consider the transmission of cultural knowledge (FoK) between various contexts. In the first section of this chapter, I examine key concepts of sociocultural theory relevant to ECE. I describe the influence of this theory on my understandings of the classroom context as well as formal and informal learning. I include an evolution of the framework beginning with how the initial FoK study came to be. I also describe the role of sociocultural theory in the initial FoK study and its impression on current interpretations of the framework.

The second section of this chapter focuses on teachers' understanding and application of FoK. I review a variety of literature that use different theories (e.g. sociocultural and hybridity space theory) to frame their work and findings. I concentrated on research that described teachers' experiences in using FoK to build relationships and design learning experiences. Given the integrated nature of learning in EC, I analyzed a variety of content areas such as literacy, math, and science.

2.1.1 Culture

It should be noted that the highly contested notion of *culture* and cultural practices are central tenets to the FoK framework. Culture tends to be a 'catch all' term that is commonly used to describe people, traditions, behaviors, and actions. It carries an implied, shared understanding. However, as anthropology literature suggests, misconceived notions exist in how

the concept is taken up (Borofsky, Barth, Shweder, Rodseth, & Stolzenberg, 2001). Indeed, over time, this term has had countless interpretations and variations.

There are two main dimensions to the foundational definition of culture. The first, classically used in America, defines culture as the world-view and philosophy of a particular group of people (e.g. Benedict, Boas). For example, patterns in behaviors, traditions, and everyday lives are perceived to shape people's personalities (Mead, 1928). For years, this was a widely accepted use of the term; however, critiques suggest that this reference is too homogenous and leads to interpretation that particular groups have a particular culture (Ortner, 2005). This leads to essentialism of groups of people, which in turn reproduces stereotypes, creates superficial notions of culture and perpetuates notions of hegemony (Gramsci, 1971). The more contemporary definition views culture as a process, a way to construct meaning (Ortner, 2005). It is subjective and exists in the symbolic processes embedded in the social world. In this light, culture is not what people do singularly, but what the socially agreed on behaviors mean.

Clifford Geertz (1973) suggested that culture is a mixture of these two dimensions, focusing on the fluid nature of culture and specifically the subjectivity that exists in cultural practices. People's perceptions and dispositions about their particular identities are influenced and are constantly changing due to historical and cultural interactions with the social world. Thus, culture is complex and dynamic. It is made up of historically and socially created interpretations of the social world. The focus is less on the "shared" notion of culture and rather on the "practice" of what people do and what they say about what they do (González, 2005). This multi-layered perspective of culture shaped the FoK framework.

This view of culture as an ongoing process denotes that human action and interaction have the ability to challenge and shape one's understanding of the world. "In action, cultural

understandings combine with social organization, cognitive processes, emotional experience, material conditions, and power relations, among many other analytically separable phenomena" (Rodseth in Borofsky, et al., 2001, p.440) to shape one's interpretation of situations and behaviors. Culture is constructed through interpretations of the social worlds. It is naming placeholder for something that is ever changing and indefinable. Therefore when the term *culture* is used in this study, it refers to something that is multilayered and dynamic.

2.1.2 Importance of Teachers' Understanding of Students' Culture in PreK

All children are situated within multiple social and cultural contexts that influence their development and learning. Cultural experiences, language, and social interactions inform and influence how children understand and make meaning of the world. Traditionally, young children begin learning at home and within the direct social network of the family (i.e. home pedagogies) (Hedges, Cullen, & Jordan, 2011). When children enter schooling, they bring with them these prior learning experiences and ways of knowing from their life worlds.

With an increased number of very young children enrolled in child care settings and preschools in the United States, ECE plays a large role in children's lives (Zigler, Gilliam, & Barnett, 2011). Along with the rise of enrollment in ECE, demographic changes across the United States [US] have resulted in increasingly culturally diverse school populations. Currently, 47.5% of all students enrolled in public elementary and secondary schools in the United States are identified as non-white, with almost 10% of children participating in programs for English language learners (US Department of Education [USDoE], 2013). In 2012, five million children under the age of five were identified as in families living in poverty (National Center for Education Statistics, 2014). Identifiers such as socioeconomic status, race, ethnicity, and gender

influence how teachers perceive students' potential for learning and academic success in their classrooms (Ready & Wright, 2011).

It is important to note here that the changing demographic landscape of the US is not the obstacle itself, rather the explicit and hidden cultural divide amongst teachers, students, families, and schools. As school demographics become heterogeneous, scholars suggest disparities in academic achievement due to lower teacher expectations for minority and low-resource students (Anyon, 1980; Delpit, 1995; Lareau, 2003). The cultural divide between teachers, schools and students includes explicit differences (e.g. race and language) and hidden school culture such as school expectations (Banks & Banks, 2001; Sleeter, 2001). The challenges associated with this cultural divide provides a tremendous opportunity for practitioners, families and educational researchers to work to eliminate the academic achievement gap for minority and low resource students in schools (Genishi & Dyson, 2009; Gregory, Skiba, & Noguera, 2010).

For young children, the culture of school (i.e. behavior and discourse expectations of students) may contrast with cultural and linguistic practices at home or in the community (Heath, 1983; Souto-Manning & Mitchell, 2009). Some teachers perceive this cultural disconnect to mean that children from minority and/or low resource homes are deficient or "behind" when entering the school system (Moll, et al., 1992). In order to counter this deficit perspective and thinking, scholars continue to examine ways to decrease the divide between school and home cultures. Instead of aiming for cultural congruence or accommodation, González et al., (2005) recommended a reciprocal or synergistic relationship between the home and school cultures.

Initially, FoK was a framework for working with minority and/or under resourced children and families that utilized home practices and resources to build on diverse cultural ways of knowing. Developed by anthropologists and an educational researcher, the FoK framework

challenges teachers to reshape pedagogy and curriculum to incorporate the wealth of knowledge and resources that children possess outside of school. Empirical research on the FoK framework focuses on preK-12 education and specific content areas (e.g. literacy and math), making the framework a multi-faceted approach for teachers to enact in all realms of education. More specifically, aspects of ECE, such as home-school partnerships, provide a foundation for teachers to reexamine the relationship of learning in the home and learning in schools[2].

2.2 Theoretical Foundations

2.2.1 Key Concepts of Sociocultural Theory in ECE

Though ECE continues to be grounded in developmental theories, there is a growing body of literature that takes a socio-cultural perspective on how young children develop and learn (Edwards, 2003; Rogoff, 2003; Ryan & Grieshaber, 2005; Souto-Manning, 2013). From a socio-cultural perspective, EC educators should consider the nested nature of the individual within social, cultural and historical experiences to understand how young children make sense of the world. In this view, context shapes cognitive, social, emotional, physical, and linguistic development. This perspective situates the individual, social interactions, and context as active components in the construction of new knowledge. "In emerging sociocultural perspective, culture is not an entity that *influences* individuals. Instead, people contribute to the creation of people. Thus, individual and cultural processes are *mutually constituting* rather than defined separately from each other" (Rogoff, 2003, p. 51).

The recursive relationship of the individual and culture elaborates on the constructivist notion that human beings are active participants in connecting new experiences to previous knowledge. In his foundational work, Jean Piaget (1972) studied how children's cognition

[2] [2] I use the term 'schools' in ECE, to encapsulate family and private child care, community child care centers, and public or private elementary schools.

developed through interactions with others and the environment and suggested that humans made sense of the world by structurally organizing information or building schema. From this perspective, learning is constructed on previous knowledge and is constructed within the psychological structures of the mind. Piaget recognized the influence of the language and the social world on learning and argued that learning is an individual and internally based process (Hatch, 2011).

But learning does not happen in isolation. Vygotsky (1978) described cognitive development as socially mediated through social interactions. The Soviet psychologist argued that before learning happens at the individual level it is constructed socially and in cultural and historical contexts (Bodrova & Leong, 1996; Wertsch, 1991). External tools, such as support from adults and more knowledgeable peers or materials items, may be used for problem solving. Once the child internalizes or makes sense of these tools, they are then able to develop thinking skills around how to solve problems. This shifts learning from a construction of knowledge to a co-construction relying on interactions with others and the world.

EC teachers often use Vygotsky's sociocultural framework to guide teaching and learning experiences (File, 1995). This can be seen in the design of intentional activities and the set up of the classroom environment to promote social learning and collaborative play. Nonetheless, some social constructivists believe that designing the classroom environment to promote social interactions is not enough. Merely selecting materials and planning a layout with the intention for collaboration may not lead to new knowledge being co-constructed (Lambert & Clyde, 2000). Co-constructed knowledge includes more than just social relationships with others (Moll, 2014). It is a social process between people, symbols, or the environment that builds on children's prior knowledge (Vygotsky, 1978; Wertsch, 1991).

Social interactions play an integral role in how children co-construct knowledge. These interactions include teacher-and-child and child-to-child exchanges. Teacher interactions with young children have important implications for development outcomes (Bowman, Donovan, & Burns, 2000). Early childhood educators model processing skills and language during meals, engage in play scenarios with children, ask prompting questions, and provide vocabulary to extend children's understandings and knowledge. In these moments, children either directly or indirectly are involved in conceptual instruction guided by the more knowledgeable person. Teachers or more knowledgeable peers support children's development and learning by scaffolding practice. They present a new organization of ideas to assist children to respond and comprehend questions or concepts (Palincsar, 1986; Vygotsky, 1978).

In addition to the process of scaffolding, Vygotsky's influence in ECE is widely recognized for *zone of proximal development* [ZPD]. The ZPD refers to difference between what a child can do independently (their actual abilities and skills) and what a child can do with expert assistance (their potential development) (Bodrova & Leong, 1996). Combining both the actual level of development and what the child can accomplish socially with others allows EC teachers to provide dynamic learning experiences that are proximal yet challenge new knowledge construction. Once a child has learned a particular skill then their ZPD increases and they are able to learn more complex tasks. In Moll's (2014) interpretation of Vygotsky's perspectives, he suggests that the ZPD was not intended solely for problem solving and instructional purposes. Rather it emphasizes the importance of social interactions contributing to ongoing, reciprocal relations for learning. It is a collaborative process where all actors involved learn.

Children learn through direct participation and observation of others engaged in real world experiences. This challenges teachers to not consider young children's developmental

skills and abilities and the daily practices and experiences that shape children's cultural ways of knowing. Children are not passive observers. They are active and essential to household functions (Moll, et al., 1992). Learning opportunities and knowledge construction are embedded in one's social and cultural experiences at home and in the community or as Zipin (2009) refers to as one's *lifeworld*.

Learning through natural experiences and more formalized school learning are different processes. Grounded in sociocultural practices, informal learning often goes unnoticed, unidentified, or categorized as less conceptual (Paradise & Rogoff, 2009) especially when the informal practices do not align with the institutional practices (Heath, 1983). In ECE, inquiry- and play-based classrooms value the less-'formal' notion of mutual, co-construction of knowledge and exploration (McLachlan, Fleer, & Edwards, 2010). The emphasis is on providing learning experiences that incorporate and encourage the use of lifeworld language, cultural resources, artifacts, values and ideologies to ignite learning (Bodrova & Leong, 1996; Wertsch, 1991); which is the very essence of the FoK framework.

2.2.2 Role of Sociocultural Theory in FoK

At the core of the FoK framework (Moll, et al., 1992; Vèlez-Ibáñez & Greenberg, 1992), is Vygotsky's (1978) socio-cultural and historical perspective. Simply put, this perspective views everyday language, experiences, and activities for household survival as part of knowledge construction, which in turn is referred to as person's FoK (González, et al., 2005). Through social interactions with others and the environment, co-constructed knowledge becomes a resource (Vygotsky, 1978). Believing that social construction of knowledge begins at birth, young children enter schooling with cultural tools and experiences that mediate learning and knowledge construction.

A key principle of the socio-cultural perspective places value on building from children's prior knowledge to co-construct with children new understandings. Children benefit from the integration of cultural resources into learning experiences through cultural mediation (Vygotsky, 1978). In cultural mediation, the individual uses representational (e.g. computers, maps), semiotic (e.g. language), or mental (e.g. memory strategies) tools to problem solve, inform actions and make meaning in various contexts (Bodrova & Leong, 1996; Engestrom, 2001; Wertsch, 1991). The cyclical notion of mediation places knowledge in historical and cultural contexts in order to carry out existing cultural activities, interactions with the social world, and in the construction of new knowledge. Teachers enacting the FoK framework view children's cultural resources as rich ways of knowing and modify curriculum to assist children in mediating these resources across and between home and school contexts (González, et al., 2005).

2.2.3 Development of the FoK Framework

The FoK framework views all people as possessing rich bodies of knowledge through daily life experiences and interactions with the world (González, et al., 2005). The use of this model challenges teachers to reconstruct their attitudes about children from backgrounds and living in communities that is different than their own. Described by González and her colleagues (2005) as a breakthrough for multicultural education, the FoK framework incorporates a postmodern[3] perspective and challenges the cultural deficit perspective. The impetus of the FoK framework was to bridge home and school cultures through (a) constructing reciprocal relationships between teachers (schools) and families (community), (b) developing teachers as

[3] González (2005) wrote, "within a postmodern perspective, the idea of general models and grand theories gave way to considering contradiction and ambiguity and local and contingent ways of positioning knowledge" (p. 38).

researchers to view how learning is developed in different cultural contexts, and (c) informing pedagogy and curriculum utilizing the acquired understanding (González, et al., 2005).

Two notable research studies lay the foundation of the FoK framework. Prior to FoK entering the world of education, the concept originated from the anthropological field. Eric Wolf (1966) studied peasants as rural cultivators, their role in the community functions and their culture. Wolf suggested that for day-to-day survival, households utilized a combination of economic and non-economic resources or 'funds'. Wolf highlighted multiple components necessary for household survival, which given the pressure of capitalism, criticized the notion of broad society that peasants lacked ability to take action. The components or 'funds' that Wolf highlighted were caloric funds, funds for rent, replacement funds, ceremonial funds, and social funds, which include cultural knowledge, traditions, values, social networks, interests and hobbies, and labor history.

Wolf's (1966) work applied a Marxist perspective emphasizing the ecological force of the larger society, which determined how the peasants reacted to forces for modernization (Dimitriadis & Kamberelis, 2006). In Wolf's study, there existed a perception that those within the peasant community were unable to function successfully in the larger society, similar to current deficit perspective of minority and low resource children in schools. Wolf wrote that peasants had, "a strong tendency towards autonomy on the part of peasant households" and "an equally strong tendency to form, coalitions on a more or less unstable basis for short-range ends" (p. 91). In other words, peasants dealt with the pressures of the larger capitalist system by forming coalitions with others because the hegemonic notions of larger society challenged their existence as a group (Gramsci, 1971). The pressures experienced included the wider society economic situation, the desire for independence within the social system and ecological issues

such as the damaging effects of rainfall on the home. The peasants relied on social and cultural capital (Bourdieu, 1986) for survival. Wolf concluded that although the larger society may not have recognized the peasants as rich in resources, they did, as he interprets, possess significant social, material and cultural knowledge for daily functions.

Expanding on Wolf's work of household resources, Carlos Vèlez-Ibáñez and James Greenberg (1992) aimed to explore the functional and cultural resources present in US-Mexican households. The pair conducted an ethnographic study to challenge the prevalent notion often held by public schools of overlooking this populations' cultural identity. Vèlez-Ibáñez and Greenburg suggest that FoK is comprised of the learning experiences that occur in the home and the US-Mexican households' reliance on social relationship for survival. A reliance on social capital within individual households, families and the community extended from a historical struggle for economic security. The trouble, as the authors argue, is that the larger system of schooling does not place importance on these intricate and necessary social networks and disregards these particular students' cultural identities and social capital (Stanton-Salazar, 1997).

Through recalling the historical experiences of the US-Mexican community they studied, Vèlez-Ibáñez and Greenberg (1992) analyzed the context of the home nested within the social, historical, political, and economic contexts of society. They found an impressive amount of knowledge and resources these families utilized in order for survival, such as bartering, adaptation, and equipment maintenance. Much like Wolf's peasants as situated under Marxist theory, Vèlez-Ibáñez and Greenberg concluded that FoK for this population were skills, experiences, knowledge of habitat, and survival.

Vèlez-Ibáñez and Greenberg's (1992) work predominantly focused on the social networks that connect the family within their home and with others in the community. They

found that when ethnographic principles were applied to visiting the home and mutual respect was established with families, a willingness to offer personal information or FoK existed that broke the traditional teacher-family relationships. At the heart of their work was the notion of building *confianza* or mutual trust with families through respectful exchanges. Through these exchanges, long lasting relationships were built with families. From there, more information was shared about the intricacies and reliance on others for survival and support within the families' social networks.

Extending on previous anthropological work of households considered under resourced, Luis Moll, Cathy Amanti, Deborah Neff, & Norma González (1992) conducted research with teachers serving working class, Mexican communities in Arizona to develop innovative approaches to curriculum and pedagogy that build on children's daily home practices. The authors defined *FoK* as "historically accumulated bodies of knowledge and skills essential for household functioning and well-being" (p. 133). Simply put, the approach acknowledges that *all* families' lives are rich with resources. This includes home life activities (e.g. cooking, cleaning, finances, and other daily situations) and social situations outside of the home that involve family members (e.g. jobs, family functions, and neighborhood interactions). Children are directly and indirectly exposed to these practices and acquire information through their participation in these experiences.

Bringing together education and anthropology, a proximal goal of this initial FoK study, was to provide a framework for those working with minority and/or under resourced children and families to connect with and respect the lived experiences and practices at home through reshaping classroom pedagogy to build on diverse cultural ways of knowing (Moll, et al., 1992). For teachers to counter this deficit perspective they took on the role of researchers to conduct

home and community visits to construct reciprocal relationships with families (community) and develop views of how learning is developed in different cultural contexts. Teachers had the opportunity to gain awareness of students' social and cultural contexts and the historical aspects of community, which was a central focus of the FoK studies in Arizona (Moll, et al., 1992; Vèlez-Ibáñez & Greenberg, 1992). The personal and community histories of the US-Mexican families were identified through ethnographic interviews. Teachers discussed how learning about families' history challenged their assumptions and reconceptualized their perspectives on families' home resources (González, Moll, Tenery, et al., 2005).

The social and historical context and population of the geographic location of the foundational FoK studies suggest a rationale for research founded on power and agency principles. Similarly, Moll and colleagues (1992) designed the FoK approach to empower teachers to tap into the rich cultural experiences and tools of marginalized students and families and give power to the community by informing pedagogy and curriculum with pedagogy of the home (Rodriguez, 2013). For teachers to counter this deficit perspective they must address the issues of power and agency existing in the cultural divides of schools and homes of marginalized students (Freire, 1970, 1993). Rodriguez argues:

> Embedded within the goals of the FoK approach are concerns regarding power and agency of teachers and communities; yet the power relations and dynamics that must be addressed as an FoK approach is implemented are not always made explicit, much less problematized, in literature that aims to raise awareness of the potential linkages between household and schooling practices. (2013, p. 88)

Teachers enacting the FoK framework must critically examine their intentions and practices to engage in classroom pedagogy that raises consciousness, power, and agency.

In a conceptual critique, Helen Oughton (2010) critically explored the origins and various interpretations of the FoK framework. Oughton deconstructed the highly ideological concept of FoK by locating it within wider theoretical frameworks, such as Bourdieu's notion of cultural capital. She concluded that indeed similarities exist between FoK and cultural capital. "They are both characterized by sets of gradually acquired and long-lasting dispositions which are manifested in skills, know-how, and competences" (p.69). Free of time boundaries, these historically based practices and beliefs are foundational to household functioning and everyday life. Both FoK and cultural capital are recursive and shared across generations. Oughton highlighted that both concepts employ economic terminology, yet cautions that difference exist in the use-value and exchange-value of cultural capital and FoK. Since FoK is often associated with marginalized and low-income populations, the exchange-value is regarded as low and may not appear privileged by hegemonic culture. On the other hand, within Bourdieu's cultural capital theory, family practices and daily functions possess high exchange-value.

In accordance with Lubienski's (2003) critique of the inflation of the notion of cultural capital, Oughton (2010) drew attention to the original intention of the term and the inherent power of using high-status cultural resources to gain economic, social, and cultural advancement. Only cultural resources that are legitimized and deemed as possessing power by hegemonic culture are considered cultural capital. Whereas within the FoK framework, all individuals regardless of background are perceived as having rich bodies of cultural knowledge (Moll, et al., 1992). Oughton suggests that rather than locating FoK within a subset of cultural capital that "cultural capital consists of those funds of knowledge which are legitimized and privileged through the dominant discourse" (p. 69).

Solely employing the FoK framework without considering power structures of the dominant system will further perpetuate a deficit perspective on educational access and success for under-represented students (Rios-Aguilar, Kiyama, Gravitt, & Moll, 2011). Teachers using the FoK framework need to consider broader cultural and social factors that impact the lives of whom they are studying, such as economic impacts and labor changes (Zipin, Sellar, & Hattam, 2012). By recognizing these local and global contexts in which the child's daily functions are situated, teachers then can empower marginalized children and families and avoid superficial transfer of cultural practices into the classroom.

2.3 Literature Review

Research on FoK continues to evolve though multiple scholarly interpretations of the framework and implementation into education. The FoK framework has entered education scholarship ranging from early childhood to higher education and further to examine in-service teachers' personal and professional FoK (Hedges, 2012). The comprehensive scope[4] of FoK also crosses academic content areas (Andrews & Yee, 2006; Barton & Tan, 2009; Gutiérrez, Baquedano-López, & Tejeda, 1999), general education practices (e.g. parent involvement and bilingual education) (Riojas-Cortez, 2001; Whitmore & Norton-Meier, 2008), as well as geographic location and demographics of participants. Linda Hogg's (2011) review of literature found nearly 50 pieces of literature from the United States, Australia, the United Kingdom and Canada.

This literature review discusses research on FoK with specific focus on how teachers theorize, identify, and apply FoK to curriculum planning. The majority of FoK literature is

[4] Reviewing the wide-ranging and vast amount of literature discussing or employing the FoK framework is outside of the range of this paper. See Linda Hogg's (2011) and Gloria Rodriguez's (2013) review of FoK literature for a full examination how FoK appears in scholarship.

framed by sociocultural theories and focuses on teachers' use of children's home contexts to plan formal curriculum. Teachers make improvisational decisions in the 'in between' or third space of home/school and formal/informal learning. Hybrid or third space theory studies exist; however, there are limited studies of how teachers use classroom context to identify children's FoK. In addition, research on FoK in ECE are also summarized and critiqued. Exploring these empirical findings provides a foundation to my study of how two EC teachers learn to use FoK responsively within the classroom space.

2.3.1 FoK Research on Relationships

Home-school relationships are a cornerstone in ECE. Traditional approaches to family involvement, such as communication about student performance or suggesting home activities to support classroom curriculum, are prevalent in schooling yet position families at the receiving end of the relationship. This results in an unequal partnership between the school and home. Scholars suggest reconceptualizing the inequitable distribution of power in the home-school relationship by teachers reevaluating their dispositions about family involvement (Dahlberg, Moss, & Pence, 2013).

Whitmore and Norton-Meier (2008) capture this revaluing of families' at home practices. In a study that focused on two mothers of elementary aged children deemed "as risk", the authors found that new relationships between home and school can be established when teachers demonstrate a willingness to share power with parents. The teachers in this study used the FoK framework to learn about how two mothers incorporate literacy into their daily lives. The mothers were invited to the school as "wise'" and contributing members of the academic and intellectual culture. Through sharing their lifeworld expertise with the class, they described a transformation in the home-school relationship. The action of the teacher to redefine parent

involvement by welcoming parents and their home-based knowledge into the school re-envisioned the power and trust relationship.

Through home and community visits, teachers have the opportunity to gain awareness of students' social and cultural contexts and the historical aspects of their lifeworld. This was a central focus of the foundational FoK studies in Arizona (Moll, et al., 1992; Vèlez-Ibáñez & Greenberg, 1992). The personal and community histories of the US-Mexican families were identified through the community and home visits along with the ethnographic interviews. The action of viewing home cultural practices and resources as advantageous must occur first in order to avoid the superficial transference of cultural practice into the classroom in the FoK framework. Teachers in the initial FoK study discussed how learning about families' history challenged their assumptions and reconceptualized their perspectives on families' home resources (González, Moll, Tenery, et al., 2005).

Teachers gain understandings and respect for the resources and learning experiences in children's homes through community observations and ethnographic family interviews (González, et al., 2005). Teachers enter the child's lifeworld context with anthropological practices to understand children, families and household functions (Moll, et al., 1992). Teachers learn and gather information from the families about their cultural experiences and activities in students' homes. This counters the traditional approach, which is to share information about student academics, behavior, or as a means of outreach to teach families about activities to do at home to support schooling. As teachers understand and respect children's FoK, it informs their professional pedagogy and curriculum for diverse communities (Andrews, Yee, Greenhough, Hughes, & Winter, 2005), thereby, improving children's educational experiences and outcomes (Moll, et al. 1992).

Learning to be participant observers, teachers in the initial FoK research project experienced the power of ethnography in relation to reflexivity, viewing culture as multi-dimensional, and how people makes sense of the world on the ground level. In a reflection of ethnographic home visitation, Martha Floyd Tenery (2005) wrote that the inquiry-based family interview questions posed by teachers were tiered and topical to initially build trust and a relationship with the family (*confianza).* The questions were used to uncover labor history, genealogy, and education background of the family members. Tenery cautioned other teachers conducting ethnographic family interviews to ensure that trust and respect are established before moving forward with questioning. She also recommends supporting home language through translators with an understanding of ethnographic principles since they engage with the family members.

Ethnographic home visits are a way for teachers to tap into FoK that may not be obvious or shared during more teacher-agenda driven interactions. Marla Hensley (2005), a kindergarten teacher, shares that prior to learning about FoK she had always valued home visits and family connections in her practice. Hensely used a sociocultural perspective on family involvement, which validated experiences outside of school and welcomed families' opinions and expertise into the classroom. She concluded that by doing ethnographic home visits she was able to see other aspects of the family's knowledge present in the child's actions in the classroom. When she visited her student Jacob's home, she knew that his father was a groundskeeper and intended to discuss with him how he might help start a garden. When she noticed a guitar leaning against a closet and Hensely asked Jacob's father to share his music with her class. One classroom visit became two and two became three. By the end of the school year, Jacob's dad had written and

directed a musical with the kindergarten class. This unexpected FoK became an intriguing addition to the classroom curriculum and culture.

In ethnographic home visits, Tenery (2005) views the teachers' role as complex and constantly moving between being a teacher and a researcher. "Ethnographic research conducted by teachers represents a voice that lies somewhere between self and other, teacher and learner, insider and outsider" (p. 128). Because of these multiple roles in multiple contexts, the teacher is afforded the opportunity to cross the boundaries into students' homes. They delicately walk the fine lines of remaining professional and intimate, objective and subjective, listening but not advising. Once they have access to children and families' cultural practices and resources, they then assist children in incorporating this lifeworld knowledge into the classroom.

An integral aspect of the FoK framework is for teachers to engage in reflection and group debriefing. The collaborative nature of the study groups allowed for sharing, critical reflection, questioning from peers, and mediating function between the home visits and the classroom. The study groups also supported teachers' discomfort conducting the home visits and in addressing issues that arose around the family interviews. These and other ethical issues are present in any work that involves multiple participants and contexts (González, et al., 2005). Teachers in the initial study analyzed the gathered FoK of the children, and designed learning experiences and activities (i.e. curriculum) together with insights and feedback from peers.

Peer discussion within study groups support teachers to make sense of embedded cultural practices in the home. A central aspect of the initial FoK study, these discussions were of 'crucial importance' for teachers' professional and intellectual development as they conducted ethnographic home visits (Moll, 2014). Teachers use study groups as a forum to talk through their thoughts of what constitutes children's FoK (González, et al., 2005). For Ellie, a

kindergarten teacher examining a students' thinking in mathematics, the study groups were imperative to understanding her focal child Evan's FoK (Foote, 2009). Before discussing her observational data in a study group debriefing session, Ellie had preconceived notions about Evan's math skills and abilities because he did not verbally interact in classroom activities (Foote, 2009). Through peer feedback and outsider perspectives, Ellie identified Evan's problem solving competencies outside of the classroom. Foote (2009) concluded that this example, "speaks to the importance of professional development such as Study Group where teachers can build an understanding of uniqueness of children and what they bring to school" (p. 50).

Key aspects and components (e.g. ethnographic interviews, home visits, building relationships with families and curriculum modifications) of the original FoK project extend to other scholarly interpretations of the framework. Researchers have used FoK as a tool to understand aspects of education, including curriculum integration (González, et al., 2005), pedagogy (Hedges, 2010; Rodriguez, 2013), preK teacher identities (Graue, Karabon, Delaney, Whyte, Kim, & Wager, 2015), and critiques of the approach (Oughton, 2010; Zipin, 2009). These works focus on how the teachers' personal cultural resources and experiences shape how they take up the framework. Teachers' personal and professional FoK is always present when making pedagogical choices and when confronting professional learning of evidence-based practices (Andrews, et al., 2005; Hammersley, 2005; Hedges, 2012). Specifically in ECE, Hedges (2012) found that teachers integrate professionally acquired knowledge of theory and development with personal FoK, creating a hybrid understanding of how to design learning experiences.

It is important to note here that a teachers' personal FoK (cultural beliefs and values) directly impacts what knowledge in the home is observed and interpreted as a rich resource. For

some families, knowledge about 'dark' or challenging (e.g. discrimination, economic status) issues contribute to the context of the home and are often overlooked by teachers observing for FoK due to discomfort around the topics (Zipin, 2009). Not tapping into these 'dark' FoK may not fully embrace the intention of honoring the students' cultural resources and empowering the use of them in the classroom.

Sarah Sugarman (2010) experienced this firsthand when she was teaching second grade in Oakland, CA. At the time, she was a veteran teacher who, while working in an urban school context that was rife with deficit-laden descriptors, was facing temptation to use them to frame the lives of her students. Recognizing that many of her students lived in situations that would be considered "dark" or challenging, she used the FoK framework to rethink her perspective of her children's lives. She and her student, Ricky, took "digital camera walks" to take photos of and discuss how he saw his lifeworld.

> Until that day, my knowledge of the neighborhood was comprised mostly of the images I saw through my car windshield when driving to and from work: broken glass in the gutters, chainlink fences around the yards, abandoned houses with boarded up windows. From the familiar bubble of my car, it was easy to notice these deficits. Walking with Ricky, however, and inspired by his excitement, I was able—both literally and figuratively— to see past the fences. The beautifully manicured gardens revealed the care and attention many people devoted to their homes, and the Halloween decorations suggested a spirit of community and the promise of trick-or-treaters. (Sugarman, 2010, p. 100)

Sugarman's honesty about struggling to see Ricky's FoK was altered through collaborative conversations with colleagues. By sharing the pictures and explaining the experience to someone else Sugarman saw the families as strategizing rather than struggling.

Acknowledging cultural resources is vastly different than altering teachers' practices. There may be instances when teachers identify children's prior cultural knowledge though it may end there. The teacher may not extend this FoK into classroom learning. When these resources and knowledge interrogate the hegemonic structures of schooling teachers may simply honor them and not build from them (Cannella, 1997; Souto-Manning, 2013). Well- intentioned teachers may embrace the FoK framework and utilize the approach to empower their students and families, while at the same time experience professional disempowerment (González, et al., 2005; Zipin, 2009). This is especially prevalent in ECE (Hedges, 2012). In response, teachers can maintain shared control over learning by incorporating both planned curriculum and improvisational 'teachable moments'.

2.3.2 FoK: Designing Learning Experiences

Teachers using the FoK framework design curricula and/or lessons based on observations in students' homes and communities. The potential of this approach to classroom instruction allows teachers and students to work together to co-construct new meanings. Thus a community of learning and culture is formed in the classroom. This empowers children to teach one another about their personal experiences and may lead to others sharing about the resources they have at home. Children sharing their culture moves pedagogy from what occurs at school, to individuals producing and sharing knowledge together, which attempts to break down deficit thinking of low socioeconomic status children by shedding light on children's cultural identity (González, 2005).

Allowing for this peer sharing helps move the instruction in school away from a rote, teacher-directed learning situation to children questioning and discovering learning together.

The intent is not for teachers to replicate the learning that occurs at home and create a direct transfer into the classroom (Amanti, 2005), rather it is to take these resources and build curricula from them. The goal is for the teacher to scaffold from children's prior knowledge and guide students in making new meanings out of the school-covered material (Vygotsky, 1978). Deliberately and explicitly using the knowledge that children bring with them as a springboard lessens the need for children to have to work so hard to re-contextualize the information being learned at school. It can help them to make connections between the home cultural knowledge and the school knowledge, thus supporting the acquisition of school knowledge, without delegitimizing their home cultural resources. This could potentially lead to a stronger association between the student and school.

A significant amount of the empirical research discusses linking the lived practices of students and academics centers on mathematics (Andrews and Yee, 2006; Baker, Street, & Tomlin, 2003; Abreu, 1995; Lipka, et al., 2005). Andrews & Yee (2006) studied teachers' understanding of home mathematical experiences. One case study told the story of how Nadia, a young girl labeled as struggling in mathematics at school, checked that the change given to her mother at the grocery store matched the receipts she received. Nadia's mother struggled to switch between Bengali and Arabic numbers, which led to problems in computing money, so Nadia would count up from the change given to ensure it was accurate. Andrews and Yee (2006) concluded that Nadia's FoK to complete this task at home was due to the authenticity and context of her life at home and countered the perspective that Nadia was lacking in mathematical skills. Further, they argued that a basic worksheet or practice with just numerals would

decontextualize the school learning experience from the student's real-life experiences with money. Discovering the ways mathematics is used in children's homes contributed to understanding how to incorporate their FoK into the classroom (Baker, et al., 2003).

Children of all ages attempt to make connections between home and school. A pinnacle shift for children is linking these two social world settings by leveraging their own FoK in learning at school. Barton & Tan (2009) examined how urban, sixth grade students drew from and leveraged their FoK in science learning. They particularly sought to understand how the classroom was a hybrid space in which the student' FoK challenged the dominant discourse of traditional school science. This is similar to Moje et al.'s (2004) view of a third or hybrid space, in which "everyday resources are integrated with disciplinary learning to construct new texts and new literacy practices that merge the different aspects of knowledge and ways of knowing offered in a variety of spaces" (p. 44). Barton and Tan investigated the ways students transformed their community-based knowledge, such as ethnic celebrations, fast food restaurants, and popular culture (music, TV, movies, and internet media) into school-based learning experiences. They found that when activities and learning linked content learning and FoK that more middle school students actively participated and took ownership of their learning.

As I explored the literature, I couldn't help but wonder how the FoK framework could be applied within the context of the EC classroom. One particular study demonstrated how young children exhibited cultural knowledge during sociodramatic play. Riojas-Cortez (2001) examined play in the housekeeping and block area. Sociodramatic play often occurs in these areas and is a mediation tool children use for learning and is also a vehicle that helps teachers to learn about their students. The teacher in this study identified children's emotions, behaviors, feelings, language, and cultural practices (changing a baby's clothes) as their FoK. She used

observational techniques of the children's play along with verbal interactions to further probe into how their play reflected lifeworld experiences. Riojas-Cortez concludes that these are strategies teachers can use in the context of the classroom to understand children's FoK and use this gained knowledge to incorporate culture into curriculum. This is important given the time and access constraints that many teachers currently face.

Though teachers apply a sociocultural perspective to explore household functions and enhance learning experiences in the classroom, a critique of the FoK framework is that at times it been oversimplified (González, et al., 2011). This happens when teachers attempt to reproduce what is observed in the home in the curriculum, which has potential to perpetuate stereotypes of families' culture (Oughton, 2010).

> These various misappropriations and misunderstandings of [FoK] demonstrate a tension still deep in the core of the anthropology of education: balancing complex claims about patterns in human behavior with simplified claims about the shared behavior of 'groups,' without misrepresenting the realities of everyday life. (González, et al., 2011, p. 483)

The complexity of understanding cultural systems requires facilitation and collaboration with others when teachers as learners reflect on home observations and design learning activities.

Teachers can possess the best intentions for drawing on children's FoK to enhance content learning and at the same time experience dilemmas and tensions in its implementation. Teachers face challenges when transforming household knowledge into the classroom. In an examination of teachers using children's FoK as resources for math education, Marta Civil (2009) suggests that it is part due to what teachers and children determine is, in this case 'math' content knowledge. Differences existed in what teachers define as valuable home and school math knowledge. When lifeworld knowledge is valued negatively, it impacts student

performance and self-confidence in the context of school (Abreu, 1995). Teachers with a sociocultural frame may valorize children's FoK yet may connect it to curriculum in a perfunctory and out of context way (Civil, 2009). In turn, this results in a superficial use of cultural content knowledge. Despite artificiality, Civil argues that when children are engaged and have a genuine interest inquiry into the activity, they are able to maximize learning.

Interest-based inquiry and curriculum is a common practice in ECE though can be contentious when popular culture is the interest (Hedges, 2011). Similar to teachers' struggles to identify content embedded in lifeworld knowledge, labeling pop culture interests as rich resources is a challenge. Often, teachers view favorite popular culture characters or games as non-academic and of little to no value in the classroom. Hedges (2011) argued that from a sociocultural perspective, pop culture interests influence young children's language, play, relationships, and behaviors in ways consistent with the FoK framework. Teachers who welcome children's interest-based FoK are demonstrating an acceptance of social norms and rules, values, behaviors, humor, and playfulness that are important for building social-emotional and cognitive skills at a young age. Further, child conversations about pop culture can lead to critical conversations about gender roles, identity, and other social justice topics.

Outside of the home, children's community experience also has tremendous impact on children's FoK. Teachers can draw on children's interests and participation in the community to inform or frame child-centered, play-based learning (Hedges, Cullen, & Jordan, 2011). Through ethnographic observations within the neighborhoods and communities surrounding the school, teachers have access to cultural events that are of interest to students and their families. Children's participation, even if solely as an observer, influences their knowledge co-construction and is a powerful resource to incorporate into play scenarios in the classroom.

Cultural events can include holiday celebrations (Hedges, Cullen, & Jordan, 2011), restaurants (Barton & Tan, 2009), or religious or spiritual ceremonies and experiences (Bone, Cullen, & Loveridge, 2007; Marshall & Toohey, 2010).

The literature reviewed for this section focused on the FoK framework in the early years, birth-8 years of age. In sum, majority of the work included teachers conducting ethnographic home visits, family interviews, community organizations, or using other anthropological methods to understand their students' lifeworlds. Mirroring the practices of the initial FoK study (González, et al., 2005), teachers reflected on their data and experiences to identify children's FoK. They then designed learning activities that drew on children's cultural resources and knowledge. Teachers used anthropological methods to understand children and families' daily practices and cultural resources that shape their knowledge of the world.

2.3.3 Conclusion

A FoK framework counters deficit perspectives on minoritized and under resourced children and their families. To do so, teachers must recognize how cultural practices and informal learning experiences in daily life works to construct knowledge. The use of the FoK framework is an important way to bridge children's knowledge, interests, social relationships and everyday activities at home into learning experiences at school. Teacher-researchers construct reciprocal relationships with families (community), develop views of how learning is developed in different cultural contexts, and inform practices utilizing the acquired understanding.

Specifically in ECE, the structure is well designed to facilitate a reconceptualization of the bridge between schools and different cultural experiences (Gillanders, Iruka, Ritchie, & Cobb, 2012). By enacting the FoK approach, teachers learn about the child in their familiar social and

cultural contexts and have the opportunity to view what the child knows as a whole entity rather than just as a student (Moll, et al., 1992).

Sociocultural theories in ECE align with the FoK approach, making it a promising framework for challenging and interrupting the dominant developmental focus. Through belief and practice change, teachers honor and empower student to mediate their cultural resources and knowledge between home and school. When these resources are perceived as valuable and honored, children are able to manage and organize cultural identity in various contexts (Holland, Lachicotte, Skinner, & Cain, 1998). In addition, both teachers and children enable control with these rich cultural resources and modify experiences within varying contexts, engaging in relational agency (Moll, 2014). In this action, teachers are viewing children from an asset rather than deficit perspective. Thus, teachers and students then are able to co-construct knowledge with children and potentially narrow the widening achievement gap.

2.4 Objectives and Research Questions

This study examines two preK teacher's conceptualization of the FoK framework and how they enact this approach in their practice and classroom. Through comparative case study, I explore how two preK teachers identified and enacted the FoK framework while enrolled in PD courses focused on culturally and developmentally responsive pedagogy and mathematics. I study how Sadie and Shelly utilize ethnographic strategies during home visits and family interviews to understand students' cultural practices and ways of knowing. Specifically, I was interested in understanding how they took up FoK within the context of their classroom and what factors influenced their pedagogical and curricular decisions.

The research questions I explore in this dissertation are:

1. How do two preK teachers make meaning of children's *funds of knowledge*?
    a. How do these teachers use ethnographic home visits and classroom context to identify children's funds of knowledge?
2. How do two preK teachers use the FoK framework to rethink (co-construct knowledge through) their classroom environment, interactions and designing of curriculum?
3. How do two teachers enact the funds of knowledge framework in an early childhood classroom contexts?

I analyze teachers' experiences employing the FoK framework through a combination of Vygotsky's (1978) socio-cultural and historical learning perspectives along with hybridity theory (Moje, et al., 2004). Through these philosophies I describe how teachers understand and take up FoK in the classroom, assist children in mediating their social and cultural resources across varying contexts, and design a space where children feel empowered to actively mediate their own FoK.

Chapter Three Methodology

3.1 Introduction

I came to this study with particular beliefs and experiences that shape how I chose to design, collect, analyze, and represent this research. I identify as a social constructivist who believes that the nature of knowledge is constructed through human relationships (Guba & Lincoln, 1994). I am interested in understanding how lived experiences of the researched are constructed within a historical moment and social context (Creswell, 2009) and social interactions (Kukla, 2000). This basic belief system implicitly guided my work as the investigator (Guba & Lincoln, 1994). I intended to uncover the understanding and enactment of FoK as a social process (including engagement with materials and interactions between people) as Sadie and Shelly learned about the FoK framework and applied it to their practice.

Stepping away from dichotomies such as true and false, the point of this study was to understand how teachers make sense of the concept of FoK (Lincoln & Guba, 2013). In qualitative and constructivist work much of the conceptualization process goes unspoken when expressed through human action and behavior. Though not impossible, uncovering this tacit sense making is difficult. I used case study to access and understand how two teachers made sense of and enacted FoK. In the analytic process, I employed the triangulation of sources, methods, and theories, to examine the patterns in the data that are meaningful.

Data for this dissertation draws from the research project, the 4KPD program, outlined in the introduction chapter. The broader research study aimed to promote developmentally and culturally responsive mathematics in preK. As a team, we supported preK teachers to (re)think about the learning opportunities, delivery of instruction, and resources available for young children and to reconstruct them bearing in mind children's cultural experiences and resources

from outside of school. The PD program wove in discussions of what high quality math looked like in an EC context. For example a common discourse centered on the value of traditional forms of direct, whole and small group math instruction along with learning through play.

I purposefully selected two case study participants from this broader research project (Maxwell, 2004). This dissertation study focuses on two preK teachers from the second cohort, Sadie and Shelly. In the fall of 2012, a total of twenty-three teachers were enrolled in the second cohort of the PD[5]. Sadie and Shelly were enrolled in the same four PD courses over a two-year time frame with the final course focused on a culminating action research project.

3.1.1 Case Study

I conducted an interpretive case study using ethnographic methods (Merriam, 2009). I wanted to understand how people, myself included, construct meaning of the world and particular experiences. This study emphasizes FoK as a framework for teachers to use to understand cultural resources and build relationships with children and families, both of which are complex situations and systems. I used case study to offer "an in-depth description and analysis of a bounded system" (Merriam, 2009, p.41) to understand the various influential factors on how teachers enacted this framework. I also focused on what teachers did within the context of their classroom that drew from children's FoK. The best way to accomplish this is to be both descriptive and explanatory by presenting a "thick description" (Geertz, 1973, p. 6) of specific contexts and phenomena.

By purposely selecting two teachers as cases (described in detail in section 3.2), I was able to look closely at their sense making of FoK within context of the 4KPD. I explored their

[5] Due to personal and professional reasons, participants left the study. At the beginning of the second year in 2013, 14 teachers remained enrolled in the PD courses with a total of 10 teachers completing all four PD courses.

interpretations of their children's FoK through their conversations in the PD seminars, interviews, and in their assignments. By focusing on two participants, I could dig deeper into how their own personal and professional FoK shaped their interpretations of their students and families' cultural and social practices outside of school. This allowed me to answer questions about the types of home practices Sadie and Shelly zeroed in on, how they approached culture, and how they perceived the exchange of home pedagogies with classroom practices.

Further by engaging in fieldwork in Sadie and Shelley's classrooms, I could examine how they interpreted children's FoK, interests, skills, and abilities. In this way I was able to make interpretations based on observable evidence rather than assumptions of their actions in practice. Particularly, examining and interpreting the interactions between teachers and students require an approach that would generate rich data and allow for active researcher participation. I conducted extensive fieldwork to understand participants' perspectives and actions as they made sense of and enacted children's FoK. Consequently, as the researcher, I also built from previous knowledge and experiences to construct new knowledge and understandings. Case study allowed me to understand particulars of everyday interactions and behaviors with analysis that recognizes a broader social context (Dyson & Genishi, 2005).

3.1.2 Comparative Case Study

I chose comparative case study analysis for my study to closely understand how two preK teachers enact FoK in different contexts (Stake, 2006). Although Sadie and Shelly were similar in many respects, the varied settings, administration, staff, previous experiences, and professional background, all shape the cases as well as my understandings and application of FoK. Additionally, comparing the two case studies provided insight into how the framework was taken up in different contexts, the situational uniqueness, and the advantages and constraints

of a FoK framework in ECE. Through comparative analysis, I examine these cases to conclude context-bound findings along with connection of meaning across the cases.

3.2 Selection of Participants

My sociocultural inquiry into the enactment of FoK in the context of a preK classroom would require focus on a social environment and interactions. To ensure that the context would support my work, I began to identify participants in the 4KPD project based on a measure of classroom quality, their Classroom Assessment Scoring System (CLASS) (Pianta, & Hamre, 2009) score. The CLASS was designed as an observational instrument to assess various aspects of quality and teacher-student interactions in classrooms (La Paro, Pianta, & Stuhlman, 2004). The CLASS provided guidance for participate selection because I was interested in preK teachers' understandings of children's cultural resources and how their pedagogical decisions, specifically environment design, curriculum, and verbal interactions. These three components are measured in quality rating system.

3.2.1 Classroom Assessment Scoring System (CLASS)

Considering my research focus, I looked primarily at the Instructional Support scores[6], which assess concept development, quality of feedback, and language modeling. The Instructional Support domain, based on Vygotsky's view of children's cognitive and language development and the interconnectedness of cultural experiences with learning (Pianta & Hamre, 2009), measures how teachers implement curriculum and co-construct knowledge with children by building on their cultural and given linguistic resources. In validation studies, researchers have found that students with risk factors in classrooms with higher Instructional Support and

[6] The three main domains of focus in CLASS are emotional support, classroom organization, and instructional support. Each of these domains includes multiple dimensions, rated on a 1-7 scale, that are later used to calculate a quality rating score. See Pianta & Hamre (2009) for detailed information about the scoring system.

Emotional Support achieve better than predicted in later grades (LaParo, et al., 2004) and have lower levels of behavior problems (Burchinal, Vandergrift, Pianta, & Mashburn, 2010). Nationally, children are likely to experience moderate levels of emotional support and low levels of instructional support in classrooms (Early, et al. 2005; Pianta & Hamre, 2009). It is in the Instructional Support domain that teachers help young children mediate cultural resources between the varying contexts of school and home.

3.2.2 Participant Selection

The research team of the 4KPD project did CLASS based ratings of classroom quality at the beginning and end of the 2011-2012 academic school year. I used the Instructional Support scores to select participants who were determined as actively supporting children's learning through interactions, language modeling, and feedback. My goal was to study teachers who demonstrated social learning pedagogy and practices.

As I reviewed the CLASS scores for the second cohort of teachers, four teachers (Janet, Sadie, Shelly, and Sophie) received a rating above a 3 for Instructional Support. Janet and Sophie were not selected because Janet taught early special education and Sophie was on break from teaching for a three-month maternity leave.

To facilitate the cross-case analysis, I wanted cases that represented different social contexts. Sadie taught at London Bridges Child Care Center, located in a working class area of Cappitown. The center used a corporate created curriculum that is focused on free play. Shelly taught at Grayson Elementary School, a public preK-5th grade school on the outer part of the city. Shelly used the Creative Curriculum, which also focused on a play-based approach to preschool. Shelly and Sadie had two preK sessions, a morning and an afternoon group, each day.

In addition, Sadie and Shelly completed an action research project for the broader research study that was framed by FoK and early mathematics. Unintentionally, Sadie and Shelly's action research projects focused on incorporating math games and activities into the transition times between activities, such as before and after mealtime and exiting and entering the classroom. Only after I selected Sadie and Shelly to participate in this study did they solidify their action research project ideas, which inadvertently enriched my comparative analysis. I was interested in further exploring how the two cases took up and implemented similar action research projects in their respective classrooms. Given that they are both enrolled in the 4KPD courses yet their classrooms are nested in different social contexts, I wanted to examine their perspectives and understandings of classroom environment, interactions, and curriculum implementation within a FoK framework.

3.2.3 Participant Recruitment

I invited Sadie and Shelly to participate in my study by email. Both Sadie and Shelly indicated interest in participating in my dissertation study via email and signed the consent form in a face-to-face meeting prior to the start of this study. Sadie and Shelly volunteered to help in distributing and collecting consent forms for families of their students. Both teachers handed the forms out in face-to-face interactions with families and for those they did not have daily contact, used 'backpack mail' to deliver the consent forms. Of the consent forms that were returned, all families approved their children's participation in the study. [See Table 1 for list of participants]

Table 1: Participants

London Bridges Child Care Center	
preK Teacher	Sadie
Students	Bobby Jenna Bryson Kyle Chad Lena Chris Mike Corrina Nikki Falisha Omar Janell Oscar Jason Shamya Jay TJ Vanessa
Educational Assistant	Sylvia
Administration	
Fall 2012	
Center Director	Jan
Assistant Director	CJ
Fall 2013	
Center Director	CJ
Assistant Director	Ellen
Other Staff	
Preschool Teacher	Sabrina
Substitute Teacher	Mary
Educational Assistant Substitute	Tanya
	Support Staff
Special Education Teacher (for Bobby)	Deb
Librarian	Marge
University Researcher	Betsy

Grayson Elementary School	
preK Teacher	Shelly
Students	Allison Kari Ally Kenny Camron Kreen Danny Laysha Donte Matt Edward Ted Emily Wayne Evie Xavier
Educational Assistant	Marnie
Administration	
Principal	Ms. Wand
Assistant Director	CJ
Fall 2013	
Center Director	CJ
Assistant Director	Ellen
Other Staff	
preK Bilingual (Spanish) Teacher	Amy
preK Bilingual (Spanish) Resource Teacher	Gina
Support Staff	
Special Education Teacher (for Evie)	Ms. Gloria
Special Education Teacher (for Kenny)	Jackie
Nurse	Jackie
District Assessor	Becky
District Assessor	Tina

3.3 Role of Researcher

As previously described, this dissertation is part of a larger PD study that included three cohorts of teachers. I was hired on the project as a research assistant in the summer of 2011 at the conclusion of the first cohort of teachers and before the second cohort began the PD. In the transition from cohort one to two, the research team spent a significant portion of the transition organizing and analyzing data from the first cohort. The research group also reflected on the successes and struggles of the first round of implementation and used this to frame the design of the PD for the second cohort. As someone new to the PD study, the information gleaned from

research meetings and data largely informed my thinking about the project.

My role as a research assistant for the 4KPD project positioned me with dual roles as both an instructor and researcher. In the fall of 2012 cohort two began the PD program. Sadie and Shelly were enrolled in this group. With different configurations of instructors, I assisted with courses one and two and co-taught the third and fourth. My role as a researcher for the project meant that I listened to the recorded PD seminar sessions, conducted interviews and classroom observations, reviewed their course assignments, and analyzed their data as the PD program occurred. At research team meetings we discussed data and used it to inform the structure and facilitation of the PD courses.

3.3.1 Researcher Personal FoK

I am a White female who was born and raised in a Midwest of the United States. I grew up in a two, heterosexual parent household with one older sibling. My parents married in their twenties and lived within ten miles of where they both grew up. Both of my parents grew up poor, working class. All of my grandparents were second-generation European immigrants, worked full time jobs, and spoke English fluently. My maternal grandparents passed away before my birth. My mom's father worked for a major beer brewing company and her mother as a telephone operator. My paternal grandparents were alive for part of my life, though I mainly spent time with them at holidays and family celebrations. My grandfather served in the military then for the city as a paver. My father's mother worked as an administrative assistant. All of my extended family live within fifty miles of their birthplace.

The working class nature of my grandparents had significant impact on my parents an in turn, had a tremendous impact on my work ethic. Both parents worked part time in high school in between playing sport and studying and for one organization their entire careers. My father

worked in sales and marketing for a power management company until his death at the age of 52. My mother worked for a non-profit assisted living facility, from which she retired after 40 years of service.

Education was always a high priority and valued in my family. My father received his bachelor's degree in English from the University of Wisconsin-Milwaukee. After high school, my mother went to nursing school to become a licensed practical nurse. Because my family identified as having a low-working class economic status, sacrifices were made for my sister and I to attend private elementary school. During our early elementary school years, my mother worked third shift. This provided the opportunity to participate at school and be involved as a school nurse. Following successful schooling experiences, my sister and I both went on to higher education. My sister received a bachelor's degree in business from the University of Wisconsin-Madison.

Other historical and social factors of my childhood influenced my current cultural beliefs, attitudes, and behaviors. My entire childhood was filled with social interactions. My parents enjoyed entertaining friends and family. These gatherings included music, food and libations, customs, and traditions. I was raised in the Catholic church and participated in the rites of the church, such as first communion and confirmation. My family traveled once per year with majority being camping trips via automobile. As my sister and I aged, my family became financially stable yet remained modest. We were encouraged to play sports, get involved in organizations, volunteer, serve in the church, and work part-time as babysitters in the neighborhood. In high school and post-secondary school, my sister and I both worked multiple part time jobs.

3.3.2 Researcher Professional FoK

The genesis of my EC career is traced back to my own early years. My mother instilled the art of inquiry-based play by allowing curiosity to drive exploration. Using the desire to know more and deeply examine items and human behaviors all while in a social environment became my way to learn. Accepting what was presented on the surface was challenged with the craving to make sense of how and why it was that way. A combination of outdoor play with like-aged children at the park, imaginative play on the front porch, piles of children's and adult literature, and social interactions were all EC principles I gained at a young age.

More formally, my ECE career began during my teen years. I babysat at minimum four days a week for neighborhood families and worked part time in child care centers. I went on to postsecondary school to study education and found my pedagogical beliefs aligned with ECE. Due to financial burdens, I worked full time at a corporate community child care center and attended schooling part time. As I transitioned from earning an Associate degree in child development into my undergraduate studies, I worked for two lawyers as a full time nanny.

I earned my bachelor's degree in ECE and immediately following graduation, began my work for the Milwaukee Public School (MPS). At the time, the school district did not have any teaching position vacancies, so I worked as a substitute teacher in elementary and middle schools. I was fortunate to hold back-to-back, long-term substitute positions at one school and was able to establish relationships with staff, administration, families, and most importantly the children. I found my professional training in ECE practices and principles to be especially valuable when I worked in special education and middle school classrooms. My work as a substitute teacher continued into the fall of the following year when an emergency vacancy opened due to an unexpected teacher death. Within twenty-four hours, I became a second grade teacher.

In the seven years I worked for MPS, I taught a variety of positions. Due to impact of the system's political and financial situation, I was begrudgingly relocated to three different schools and a total of 5 different grade levels. Each of the schools I taught in were considered minority majority, over 95% students were enrolled in the free or reduced lunch program, were located in high-risk areas, had high levels of poverty and homelessness, and served children with English as a second language.

As a classroom teacher, I worked part time jobs on nights and weekends to cover the costs of my undergraduate degree. These jobs ranged from waiting tables to providing district wide PD on Saturday mornings and evenings. All the while, I continued my education and earned a Masters in ECE. Following this graduate degree, I taught kindergarten while teaching evening classes as an ad hoc instructor for the University of Wisconsin-Milwaukee. My doctoral work began in the summer of 2011.

3.3.3 Reactivity

It is inevitable that qualitative inquiry intrudes on cultural practices and has the potential to generate change on participants and contexts. When I collected classroom observational field notes for this dissertation study, Sadie and Shelly were enrolled in the third 4KPD course that I was co-teaching. I recognize that my role as their course instructor and as a researcher entering classrooms had potential to influence Sadie and Shelly's behaviors, their practice, and their perception of me (Maxwell, 2004). I responded to this possible reactivity of the teachers by thoroughly explaining how my dissertation topic and focus was separate from the larger PD study yet it would include data from the 4KPD courses. I also explicitly explained that I was not in the classroom to evaluate, rather to observe their enactment of FoK and mathematics.

As an active participant in this study, I also had to respond to this observer effect for

myself. I kept a reflection journal during my time observing that documented my thoughts and interpretations of classroom practices as Sadie and Shelly's instructor. Also, during instances in the PD when an example from my observations served as examples to support the discussion, I either consciously chose not to share them with the group or would quietly suggest to Sadie or Shelly for them to share the example rather than me. Moments such as these were also documented in my reflection journal. By documenting my experience, I allowed myself to be aware of what was happening and recorded what I witnessed, my involvement, and my interpretative thoughts.

As an unfamiliar adult and observer, I recognize that my presence may have affected the behaviors of the children and the classroom setting (Patton, 2002). In both classrooms, Sadie and Shelly introduced me to the students as someone who was watching what they were doing. At first the children were curious about my name, what I was doing on the computer, and why I wasn't playing with them. Over time, I became a participant observer. The children in both classroom settings quickly warmed up to the idea of me moving around with them and at times we interacted together. I recorded these incidences in my field notes and later elaborated about them in a journal as a way to monitor with whom, where and when these interactions occurred.

3.3.4 Ethical Considerations

Given the naturalistic nature of this qualitative study, essential ethical considerations were made before, during, and in written representation (Sikes, 2006). I set up traditional safeguards by "maintaining confidentiality, obtaining fully informed consent, guarding against harm, and protecting privacy" (Lincoln & Guba, 2013, p. 75). Most of these precautions were made before entering the field, however the real-life context in which this study is situated did, at times, warrant on-the-spot ethical decision making. All decisions made during this study

considered the impact on all participants. Above all, the integrity of this work is grounded in the utmost respect that I have for Sadie and Shelly. They took a risk and were vulnerable to have me in their classrooms to examine their practice and see into their lives.

This study conforms to the University of Wisconsin-Madison's code of ethics and received approval from the University's Institutional Review Board (IRB) and the Cappitown School District's External Research Committee. I purposely selected participants from the 4KPD (discussed in detail in the next section), which had received research approval from the IRB. Sadie and Shelly both signed consent forms for the participation in the 4KPD project. The consent form the participants had previously signed was specific to the aims and methods of the broader research project. Since classroom observations were included in my dissertation, a new consent form was required. With the help of Dr. Anita Wager, I received IRB approval to conduct fieldwork on January 8, 2013.

All names have been changed to protect the identities of teachers, staff, children, and families in this study. This includes the city, neighborhoods, and school site names. I carefully selected data and information about the city, neighborhoods, and schools to provide the reader context yet eliminated any obvious identifiers that would lead to deductive disclosure (Wiles, Charles, Crow, & Heath, 2006). In chapter five, the local neighborhood association website referenced for statistical information has been pseudonym and is not included in the reference list to protect the identity of the participants.

The use of interviews inherently allows for informal conversational speech between the interviewee and the researcher. Once transcribed, conversations that are audibly understandable contained grammatical errors and other spoken filler words such as um, like, ah, you know. After cleaning the transcripts for anonymity, I chose to leave the quotations as they said. Later,

in the written representation of Sadie and Shelly, there were times when I had to move away from the verbatim to paraphrasing quotes for readability without altering the meaning. As I paraphrased quotes, I maintained the essence of the spoken word and the context in which it was said by asking myself, 'have I rephrased the interviewee's words without changing their meaning?'.

In addition to handling the data to protect confidentiality and accuracy, I considered minimizing harm by maintaining sensitivity to the content of what participants shared. The context of this study situated Sadie and Shelly in spaces where their dialogue reflected comfort and at times they spoke freely about their work site and the district. These honest statements contributed to their story though I took caution of how this data would be perceived by the reader. When I determined that the quote added to the research, I included it in the findings. Other times, I opted to use the data to contribute to my understanding of the case rather than include it in the final written representation. My intention was to protect the confidentiality of Sadie and Shelly and represent them in an accurate and respectful manner.

As my role during field work evolved to be less of an etic observer to more participatory (by engaging in conversations with the children and staff during their class time), immediate ethical decision were made on the spot. There were instances when Sadie or Shelly would have personal, informal conversations with other adults at the door or on the phone, while the children played, and on the playground. Most often, I chose to focus my observational field notes on what the children were doing though at times the family would share information that potentially spoke to their FoK.

As the researcher, I found these situations challenging because I was curious about Sadie and Shelly's classroom experience and understanding of families' cultural practices. As a former

classroom teacher, I recognize the power these interactions in identifying children's FoK and equally important, on demonstrating one's personal biases and values. I also have an understanding of the necessity to step aside from instruction to talk to coworkers and the importance of talking with families. When this occurred, I made a note in my field notes to indicate that this was a personal conversation between the teacher and an unconsented individual. I further extended this by not including these types of situations in the written representation of findings because not all staff members and family members had signed consent forms to participate in the study.

Drawing from my previous work as a classroom teacher, I knew the importance of being sensitive to the relationships made with all participants in this study. Both Sadie and Shelly introduced me to the children though at times they would question my participation (or lack their of) in activities and what I was doing. They were interested in my laptop and what I was typing. I would tell them simply, "I am typing what you are doing." I then would re-read the verbatim quotes I typed and descriptions of what they did. For the most part children gave a shocked reaction followed by a smile and continued their work.

Additionally, my experience of constant relocation of teaching placement in the MPS system taught me valuable lessons in how to transition away from colleagues and young children with dignity and respect. On the second to last observational day, I began to tell the children that I would no longer return to the classroom and answered their questions. On the final observation day, I spent much of the time as a participant observer without my laptop out. I took occasional photographs to jog my memory when I wrote about it about after I left, but for the most part spent time playing with the children and helping the teacher.

3.4 Data Collection

Capturing the complexities of the object of study is foundational in case study research (Stake, 1995). The research design must incorporate multiple methods and points of analysis to understand naturally occurring interactions and in multiple contexts (Thomas, 2011). To answer the research question of how two preK teachers make sense and enact FoK, that meant drawing on their perspectives and experiences within various settings. I wanted to gather data that looked at what FoK Sadie and Shelly brought with them to the 4KPD courses, how they made sense of the FoK framework, how they discussed this understanding with colleagues, how they perceived applying FoK to their practice, and how it was enacted. To do so, I used a number of data sources for this research study (see Table 2): recorded PD seminars, interviews, artifacts, and ethnographic observations.

Table 2 Data Collection Methods

Data collected for larger research project		
Source	**Setting**	**Time Period**
CLASS Observations	Classroom	Fall 2011, Spring 2012, Fall 2012,
Small Group Seminars Whole Group Seminars	Professional Development	Fall 2011- Weekly from September to December Spring 2012- Weekly from January to May Fall 2012- Weekly form September to December Spring 2013- Biweekly from January to May
Interviews	One on One, Semi-structured	Fall 2011, Spring 2012, Fall 2012, Spring 2013
Artifacts: Conference Reflections Family Math Night Reflection, Home Visit Reflection, Learning Story-Interview, Learning Story- Observation,	Professional Development	Fall 2011, Spring 2012, Fall 2011
Action Research Project	PD Course District Presentation	Spring 2013
Data collected for this dissertation study		
Source	**Setting**	**Time Period**
Ethnographic field notes	Classroom and School (includes photos of environment, activities and materials)	Spring 2013 3 three-hour observations per month per participant from February to May (A total of 36 observation hours per teacher)
Notes/Reflection Journal	Informal conversations and reflections on my visits to the participant's classrooms	Following each observation
Neighborhood Observation	Photographs and field notes of the community within a two-mile radius surrounding both sites.	Spring 2013

Through the 4KPD project, I had access to data that represented Sadie and Shelly's experience as they gained understanding of FoK. Through weekly readings, a mixture of audio-recorded whole and small group conversations and activities, teachers in the 4KPD project were encouraged to draw connections between new information and their prior knowledge and experiences in working with young children and families. The research team interviewed all participants to gather teacher perspectives on young children's early mathematical thinking, personal and professional beliefs on ways children learned mathematics, how it connected with play, and more generally, the highlights, challenges, failures and successful moments of teaching preK. CLASS observations were conducted at the beginning and end of the academic school year and included one half hour of ethnographic notes to serve as context for the observation.

In addition to the data from the broader 4KPD project, I conducted ethnographic fieldwork of Sadie and Shelly in the context of their classrooms. I observed, took photographs, and wrote in a reflective journal. Throughout my time spent observing Sadie and Shelly, I often had to remind myself of the research questions for this dissertation. Based on my personal and professional FoK, I found that the excitement, fast-paced nature of preK, multiple actors, and site policies and procedures captivating. I used a reflective journal to honor the thoughts and retain my research focus.

3.4.1 Teacher Professional Development Seminars

Influenced by elements of *communities of practice* (Lave & Wenger, 1999), the 4KPD seminars engaged teachers in activities and discussions that drew from and extended their knowledge. Seminar discussions were rich in teacher reflection about their conceptualizations of EC theory, FoK, and early math. At times these discussions were structured by facilitator-designed questions and thinking prompts, whereas other times the teachers took the whole or

small group conversations in the direction that best suited their needs. This resulted in a combination of data that was specific to the PD topics and connections to other aspects of their practice.

I drew from all of the audio-recorded 4KPD seminar data. To answer my research questions, my main focus was on data that captured how teachers thought about FoK, how they used the framework to understand their focal child's family practices at home, and how they incorporated children's FoK into their pedagogical decisions. Naturally, the topic of FoK and teachers' perceptions of children's cultural knowledge was intricately woven into many of the conversations regardless of the discussion topic. This meant a careful read through the entire seminar data to determine which seminars to include in this dissertation.

3.4.2 Interviews

To complement audio-recorded PD class sessions, participant-created artifacts, and the culminating action research project the research team conducted semi structured interviews (Roulston, 2010) at the beginning and end of each academic year (2011-2013). The interviews asked teachers about their educational and professional background along with current understandings of developmentally and culturally mathematics in preK settings. At the completion of PD courses, teachers were also asked about their learning experiences, the covered content, and the application of FoK and early math into their practice. To support their responses, teachers provided examples of how they used children's FoK to inform learning opportunities in the classroom.

Interviews from the broader 4KPD project played important role in this dissertation study. They helped me contextualize teachers' education and previous professional experiences that informs their practice. The interviews also provided insight into how Sadie and Shelly define

and understand FoK. Through discussions about their focal children and classroom practices, I used the interviews to examine their use of FoK in thinking about general curriculum design and classroom practices. Capturing FoK understanding and pedagogical approaches to curriculum through interviews were important in order to later analyze how the teachers perceived and mediated children's cultural resources into the classroom.

I was assigned to interview Sadie and Shelly at the end of May in 2013. This interview followed the conclusion of the teacher action research projects and was the final exit interview for the 4KPD research study. At the time, I was the action research course facilitator and concurrently gathering ethnographic field note observations in Sadie and Shelly's classrooms. I posed extension questions to the two teachers that connected the course materials and conversations, their action research projects, and what learning opportunities I observed in the classrooms. Sadie and Shelly discussed how the 4KPD course resources (including colleagues) informed the way they understood and took up FoK in their classroom environment, interactions and curriculum enhancement.

3.4.3 Teacher Created Artifacts and Action Research Project

In addition to the course PD seminars and interviews, the broader research study had the teachers complete course assignments and a culminating action research project to demonstrate their understanding of EC theory, FoK, and mathematics. The assignments demonstrated how the cases identified and interpreted the focal children's FoK through their personal and professional lens. The reflection papers were used to support the description of the cases and to further examine their perspective on children's social and cultural histories and resources.

The action research project is the artifact that captured not only how Sadie and Shelly understood and defined FoK but also how each thought to incorporate it into the classroom. For

this dissertation, the action research papers were used in conjunction with the classroom observations to explore how Sadie and Shelly made sense of children's cultural and social influences children in between the varying contexts of home and school.

3.4.4 Ethnographic Field Notes

I conducted three-hour classroom observations in each classroom across the second semester of the second participation year (spring of 2013). A total of 36 hours or 12 observations per case was spent collecting ethnographic field notes of Sadie and Shelly in their classrooms (Emerson, Fretz, & Shaw, 1995). The detailed field notes including context and dialogue intended to be a "record of events to provide a relatively *incontestable description* for further analysis and ultimate reporting" (Stake, 1995, p. 62). The observations aligned with the implementation of Sadie and Shelly's action research projects and occurred in the morning sessions of the school district's preK program.

A variety of scheduling constraints were present for both the participants and me, which resulted in routine weekly observations. There were times, however, when multiple observations happened during a given week because I interpreted particular activities as instances of FoK and I wanted to observe the second day of the activity. For example a child made a connection between a story read during whole group with a home practice and Shelly suggested they make pancakes. Shelly had the children make a list of the supplies needed and promised to continue to activity the next day. Only following approval from Sadie or Shelly, I would return to observe how the activity spilled over into the subsequent day's lessons or play.

My observations focused broadly on all aspects of the preK day, including routines, whole and small group settings, outdoor and free play in an attempt to understand how teachers access, use and reciprocate children's FoK. Following each observation I wrote in a reflection

journal. I noted questions that arose as I recorded field notes, extra information that I observed as I packed up and left the site, and my reflections of the classroom environment and instruction. This reflection journal was a supplemental data source to provide context of the classroom observations and will also code the journal during analysis.

I conducted neighborhood observations within a two-mile radius of each site taking photographs of areas, such as parks, homes, businesses, and restaurants, and observed people and places in the communities surrounding the school sites (González, et al., 2005). In addition, I researched demographic and housing information about the area. This information enriched my analysis of Sadie and Shelly's understanding of FoK and my interpretations of FoK enactment in the classroom. The neighborhood observations will also support creating thick descriptions of Sadie and Shelly and the context of London Bridges Child care Center and Grayson Elementary (Dyson & Genishi, 2005).

3.5 Data Analysis

I examined evidence from each case to understand each participant's features and her context (Stake, 2006). These context-dependent factors were then cross-examined through descriptive and systematic analysis for confirming and disconfirming evidence (Saldana, 2013). Each step of this process was driven by a combination of my epistemological beliefs and Vygostky's (1978) socio-cultural theoretical framework. I analyzed the data using four broad steps: (a) data preparation, (b) determining coding cycles, (c) multiple rounds of coding, and (d) running queries and matrices (graphic representations).

3.5.1 Data Preparation

First, I prepared all data by assigning all participants and locations pseudonyms to provide anonymity and confidentially. The interviews and PD class session were transcribed. Once all data was cleaned and formatted, the sources were uploaded into NVivo software.

3.5.2 Determining Coding Cycles

Based on the methodological needs of the study and the three research questions I opted for a mixed coding approach. This allowed for some minimal emerging codes but focuses predominantly on theoretical and preselected coding structures. My coding choices were informed by Saldana's (2013) seven subcategories of coding methods and approaches to analysis. The three selected coding methods include domain and taxonomic, values, and verbal exchange.

Domain and taxonomic coding was used to uncover the essence of cultural knowledge and exhibit in their behaviors and experiences (Saldana, 2013). Commonly used by ethnographers for interviews and observations, domain and taxonomic coding can be used to analyze the *semantic relationships* (Spradley, 1979) that exist within domains. In this study, I analyzed how Sadie and Shelly used ethnographic home visits to uncover a students' (and families') FoK. My analysis balanced between generating an understanding of cultural practices while respecting the variation of individual human subjects. I especially attended to the danger of placing too much order on the messiness of social life (Geertz, 1973).

Values coding reflects how a participant perceives the world (Saldana, 2013) and includes a participants' beliefs, attitudes and values. All three of these aspects indicate how one perceives the self and others in the world. For the purpose of this study, values coding was used to understand how Sadie and Shelly positioned themselves personally and professionally, how they view children and learning (pedagogy), and ideology.

I used verbal exchange coding to analyze the meaning of conversations between teachers in the 4KPD and classroom interactions. The verbal exchanges between actors (teachers, children, assistants, family members) play a significant role in understanding the classroom culture and how Sadie and Shelly make sense of children's cultural experiences.

One note about the coding process for the observational field notes. For the most part, the observations sequentially flowed chronologically from routine to routine. As a researcher, I grappled the most with capturing the free play time in both classrooms. I attempted to multi-task and switch off between observing the various simultaneous activities. Once the field notes were coded into "chunks", which Saldana (2013) describes as capturing the essence of the data with the important surrounding context, the data appeared fragmented. For example, in Shelly's classroom, she and students were playing a Go-Fish game at a table while children were playing zookeeper with a jaguar and four jaguar cubs. Because the zookeeper activity was in the middle of the Go-Fish game, the chunked data was split and therefore not cohesive when I ran queries and matrixes. To solve the dilemma of preserving chronological procedures and context yet wanting to code individual activities in entirety, I copied and restructured the field notes as individual activities, such as the 'Go-Fish Game" and "zookeeper". I saved them as separate data sources in the NVivo file for analysis.

3.5.3 Multiple Rounds of Coding

I approached the data analysis in two coding cycles (Saldana, 2013). Due to the complexity of the data, I began with generic and open coding in the first cycle. The first cycle included attribute coding and simultaneous descriptive coding based on topics of the research (Miles & Huberman, 1994; Richards, 2009). All data was auto-coded for participant attributes, such as name and gender, of the teachers, other adults, and children. The intention of this initial

coding was to provide structure and yield substantive analysis and coding decisions. These simple coding schemes rendered reoccurring themes and ideas that overlap sources and become complex (Glesne, 2011). During this first coding cycle, I continuously returned to my research questions that reflect the ontological and epistemological frames of the study (Trede & Higgs, 2009) to explore the interpretive meanings found within the data.

In the second cycle, analytic coding, data sources were coded for patterns. I looked for themes and explanations that emerged in the data from the first cycle (Graue & Walsh, 1998). Analysis began with deductive coding, which is framed based on the theoretical perspectives of the study. External coding concentrated on the theoretical and conceptual frameworks that are foundational to this study (Graue & Walsh, 1998): sociocultural-historical theory and FoK. I coded the data by 'chunking' data to capture the essence of the data within context. Following this first analytic read through the data, I reviewed the coded chunks of data when analyzing the emerging themes for the second cycle of coding.

As I began the second cycle, my coding plan changed. At first, the second cycle of coding was to reflect various coding methods that were carefully selected to analyze specific types of data[7] (Saldana, 2013). In planning and organizing this coding structure, I realized that the coding methods that I selected for particular data would be better utilized across all data sources. For instance, different components and how the FoK framework was taken up were present in all data sources. This required subcategory codes to label these aspects of the data. Due to this, simultaneous coding across sources, coding categories were used to interpret themes for each case from various sources.

[7] For example, I was going to identify certain codes for interviews whereas other codes were to be applicable to field notes.

3.5.4 Queries and Matrices

Throughout the coding process, I utilized analytic tools in the NVivo software to run queries and matrices of the data. These queries were based on analytic memos and journal entries I wrote as curiosities emerged. I used writing as an analytic method to think about and pose questions to delve deeper and uncover themes in the data. There were also analytic instances when I used the queries to support my interpretations across data sources. For instance, as I constructed the teacher profiles for chapter five, I noticed emerging themes for each case. I used a word frequency query to create a list of most common words used by Sadie and Shelly during interviews and PD seminars. The confirming or disconfirming evidence from the query lead me to revisit the data as I created the case representations.

Data analysis was an ongoing, recursive process of examining, interpreting and reinterpreting the data (Patton, 2002; Richards, 2009). As not to get stuck in what Bazeley & Jackson (2013) coined a "coding fetish", which is getting wrapped in the coding phase and not moving on to theming, drawing conclusion or implications, I periodically revisited the selected codes and research questions. I deleted, merged, and added new codes as I gained insight from the data.

3.6 Research Quality

Quality standards in qualitative research have been the subject of much scholarly attention (Denzin & Lincoln, 2003; Eisenhart & Howe, 1992; Steinberg & Cannella, 2012). Regardless of the nature of the discourse on research quality, a common standard is that quality qualitative research requires an alignment between the epistemology and methodology. I attended to the concern of research quality by focusing on the triangulation of sources, methods, and theories. To do so, I focused on rigor of data collection, analysis, and representation. I drew

from Lincoln and Guba's (1985) criteria for trustworthiness (*confirmability, credibility, dependability, and transferability*); which addresses concerns of rigor and authenticity. In this section, I describe how I addressed aspects of quality in my work and discuss the ethical considerations made in the research process.

Quality qualitative research requires, among others things, for the researcher to collect, process, and present data in a transparent and interconnected way. Methodological tools such as reflexivity and triangulation in all steps of the research process assist the researcher in presenting well-rounded findings to the audience. In my work, I used reflexivity to look at my own writing of analytic memos and reviewing the constructed representations of the data after receiving helpful insights from my advisor. At times the scrutiny was uncomfortable and incredibly challenging, though I recognize it was a valuable process of getting closer to unfamiliar findings (Pillow, 2003). I also used self-reflexivity in this work by describing my personal and professional FoK to allow the reader insight into how my subconscious subjectivity and biases framed my analysis and interpretations of the data.

An important part of case study research is the use of triangulation as a methodological tool (Stake, 1995). In the design of this study, I chose multiple methods for data collection to capture different aspects of Sadie and Shelly in different contexts. I used triangulation to analyze the various data sources to understand similarities and differences across how Sadie and Shelly made sense and enacted FoK along with how they reflected and discussed their understandings with others. Analyzing across the data allowed me to gain credibility by checking my interpretations in the classroom observations with what the participants shared in the social setting of the PD seminars and during interviews.

Peer debriefing is another tool I used in this dissertation to gain insight from a variety of colleagues during data collection and writing. At the time of data collection, I spent time debriefing with four other research team members who were also engaging in field observations. We discussed ethical issues, styles of conducting observational notes, and initial interpretations. I used my project journal to reflect on these conversations. Throughout the life of this dissertation, I was also fortunate to present preliminary findings to an EC peer group. I gained valuable feedback that challenged my thinking. Lastly, I an indebted to my advisor for being a sounding board to my thinking about theoretical connections to this work, providing critical feedback on data collection and analysis methods, and guidance on how to represent quality findings. All of these forms of peer debriefing shaped this dissertation to build confidence and credibility in the interpretations and findings.

Given the interpretive nature of qualitative analysis, I acknowledge my reflexivity in this research study (Foley, 2002; Pillow, 2003). In gathering, analyzing and later writing about the data, I bring my previous experiences as a classroom teacher, college level instructor and my personal biases and values to the representation of the participants. I recognize my subjectivity in the research process and consider it throughout every step of the study. I was mindful of the inferences and assumptions I drew from the words and actions of the participants in the various settings (Maxwell, 2004).

Since statistical generalizability is not the aim of qualitative research, the focus is on ensuring the findings are transferable to other contexts. I provide thick descriptions (Geertz, 1973) of the context to allow the reader to determine the study's application to their own work. The potential user can only make the decision of transferability. I employed ethnographic principles into the data collection process and constructed extensive and detailed field notes of

classroom practices. In the construction of this representation, I diligently wrote about Sadie and Shelly's work context to provide enough detail for the reader all while ensuring anonymity for all participants.

Qualitative inquiry is less about trying to convince the audience rather to provide enough information to understand the data. Data for this study is presented as evidence of participants' experiences and understanding only after particular items were labeled through a theoretically based analysis. I recognize that data for this study is not neutral or value-free because the participants and myself as the researcher are culturally, historically, and theoretically situated (Freeman, et al., 2007). I presented my, Sadie's, and Shelly's personal and professional FoK to allow the reader to understand the cultural values, beliefs, resources and biases that we brought to this study.

Chapter Four Findings Profiles

4.1 Introduction

In this chapter I present profiles of the teachers and their contexts. Each teacher profile is written as a narrative bringing together Sadie and Shelly's spoken descriptions of self and my interpretations. As I wrote through their personal profiles, I uncovered Sadie and Shelly's understandings of the workplace. I used writing as analysis to understand their perspectives of how and why they describe their workplace as they do. In the presentation of Sadie and Shelly, I attempt to honor their voices through writing their stories as a method of inquiry of their personal and professional experiences, perspectives, and practices (Richardson & St. Pierre, 2008).

As illustrated in the literature review, people have varied and numerous FoK. These historically accumulated cultural resources have tremendous impact on one's beliefs, values, behaviors, and cultural practices. Coupled with social networks and broader societal influences, a person's multiple FoK are tightly interwoven. My intention was to reflect the inquiry-based approach of the FoK framework to understand the teachers' personal and professional FoK. I sought to look at their beliefs and their practice to yield insight into how their personal and professional ideologies inform and are informed by their practice. I pulled from both explicit interview responses and informal class seminar conversations to understand how their backgrounds shaped sense making of the FoK framework. From classroom observations, I analyzed how their values, attitudes and beliefs were present in their pedagogical decisions and interactions with others.

Ethnographic practices are foundational to the FoK framework. For teachers, they use an anthropological lens to shift their perception of their children and families, classroom, and the community around the school. Learning about a child's FoK begins prior to entering the home

by studying the community and neighborhood where the child lives (González, et al., 2005). Just as teachers engage in this practice of 'casing the joint' (Dyson & Genishi, 2005), I too spent time studying the neighborhoods surrounding the schools.

This section is organized into teacher profiles. Each teacher profile is organized with a description of the site's neighborhood, followed by site, then teacher, and finally with a description of their focal children. I begin with the Oakcrest neighborhood where Sadie's site, London Bridges Child Care Center, is located. This profile is followed by a Shelly's profile that describes the Blue Bush neighborhood where Grayson Elementary is situated. For the 4KPD, Sadie and Shelly had a focal child for each year in the program. Both of the focal children are described following the teacher profiles. [See Table 3: Focal Children on p. 85]

4.2 Sadie's Profile

4.2.1 Oakcrest Neighborhood

On the northeast side of Cappitown, the Oakcrest community is made up of commerce and residential buildings, a mixture of houses and businesses. Sadie's 4K site, London Bridges, is tucked behind a local bank and just to the east of a large apartment complex and a health facility [Field Notes, 03/01/2013]. A Cappitown district police department is directly adjacent to the north of the building with the police department's parking lot in between the buildings. One mile east of London Bridges is a regional airport. Trees and sidewalks line the streets. Estimated percent of persons living in the Oakcrest neighborhood identified as 48.8% White, 21.1% African American, 15.9% Asian, 4.9% Other or multiracial, and 9.4% Hispanic or Latino [Neighborhood Association Website, accessed 2014].

London Bridges faces a major traffic triangle intersection with multiple city bus route stops accessible at the corners near the child care site [Field Notes, 03/01/2013]. This intersection is a heavily traficated area of the neighborhood. About 1000 feet from the center, there is a gas station, a major pharmacy retail chain store, and a shopping town center. The shopping center includes a grocery store, auto parts store, salon and spa and a coffee shop. A McDonald's is prominently on the corner close to London Bridges. A local, collegiate baseball team field, city parks, and churches are within a mile of the site [Field Notes, 03/01/2013].

Within a mile London Bridges Child Care Center there are a variety of housing options and three local public elementary schools in the Oakcrest neighborhood. The residential neighborhood near the site includes ranch style homes, four-family apartments, large government subsidized apartment complexes, and condominiums. The homes in the Oakcrest neighborhood vary in size but majority of the homes are ranch style [Field Notes, 03/01/2013]. Median price of homes in 2013 near the London Bridges is $128,820 and average 1, 258 square feet [Neighborhood Association Website, accessed 2014]. One of the three public elementary schools, Sea Vista, is tucked back in this residential area and a park is just a few blocks from the school. A large amount of students are dropped off via car [Field Notes, 03/01/2013]. This neighborhood school feeds one of the two major public high schools in the city. The park has a baseball diamond, basketball court, and a play structure. A large Methodist church is next to Sea Vista School.

4.2.2 London Bridges Child Care Center

Located on a main intersection, London Bridges corporate child care center is a recognizable building in the Oakcrest neighborhood. It is a one-story light grey building with a vibrant colored roof. A few classroom windows on the east side of the building are visible from the intersection. On the opposing side, there is a large parking lot and a large outdoor play area that is divided into two sections. One third of the playground is dedicated for younger children, infant through toddler. The other main section of the outdoor area is used by the preschool and

school aged children. This fenced in area has a large plastic play structure, basketball hoops on a concrete space, a grassy area, and an open sun shelter over two picnic tables.

The entrance to London Bridges secured with a keypad access code for families and staff. For visitors, there is a doorbell in the foyer of the building. Either the center director or assistant director answers the doorbell to verify the visitor. The foyer is decorated with flyers, posters, and other notes for families. There is a front desk area for administrative tasks and an infant room to the right of the entryway. To the left there are stairs leading downstairs to the basement where the kitchen, school-aged before and after school area, and staff break room are located. To the left of the main desk, there is a hallway leading to the north end of the building. The classrooms on both sides along the hallway ascend in age. For example the older infant and toddler room is first and at the end of the hallway is the 4K classroom. The hallway leads to Sadie's classroom. Outside of the closed door are pictures and teacher descriptions of Sadie and Sylvia, the educational assistant. There is also a message board and notes for families.

[Field Notes, 2013]

Sadie was aware of the unique circumstances that come with housing a 4K program in a corporate child care center. As a long time employee of the center, she recognized corporate policies and at times struggled to mesh her personal and professional ideology with the business model of the company, state license, and accreditation requirements. "Granted we don't have the school rules but we have a whole set- a bazillion- of corporate rules that we follow." [Whole group, 11/2011] Of the large number of rules this particular center must abide by, Sadie expressed in multiple settings her frustration with being unable to take her 4K class on field trips (though the five-year-olds were allowed), making environment layout decisions[8], and the inability to have identifiable information next to a photograph of a child anywhere in the building. Teachers were required to label every shelf with a picture at London Bridges to help children put things back in their proper place and print awareness. Sadie expressed that though she doesn't care how her block shelves look or how children put blocks away, this environment decision was not hers. "The corporation told us to do that. There's no choice." [Whole group, 09/2012]

[8] For example, Sadie shares that state accreditation requires the book area has to be located away from the block area. [Small group, 10.05.2011]

Sadie explained to colleagues that the implementation of 4K in the child care site brought a layered financial focus to enrollment. For full time child care of a child who is four-years-old at London Bridges, families paid full price for enrollment. This per child fee paid to the company and is more than the per student allocated reimbursement from the Cappitown school district paid to the site. Put simply, if London Bridges enrolls a child for care they make more money than they do if the child is enrolled in the district 4K. Due to these constraints, Sadie's director at London Bridges kept enrollment open for full time preschool enrollment. "They nickel and dime, you know. 'Let's combine all these kids, move all these kids around 'cause [of] my labor hours. It is a business. My director sees kids as dollar signs." [Interview, 09/2012] During the first year of the district-wide 4K in 2011, Sadie's classroom had four children enrolled in 4K and the other 10 slots were filled with children enrolled in child care preschool.

In addition, the Cappitown school district had a cut-off enrollment date in which schools and community sites submit the total number of students registered. Based on this one time total each site received a reimbursement from the school district. This reimbursement money had multiple purposes including material purchase of supplies and furniture. For Sadie's ECCE site placement, she expressed undesired consequences from this cut-off enrollment date. She explained her director's perspective as, "'Well we're not getting money for any kids that enroll after next week so we're not taking any more kids.' and 'Then the parent is gonna have to pay daycare [prices].'" [Interview, 09/2012] Sadie's concern was focused on ensuring educational access for all children, especially those in the Oakcrest neighborhood. She felt that if families have to pay for preschool but can go to an elementary school site for free, then they would most likely choose the school site.

On the other hand, families that need full day care could choose between enrolling in the preschool classroom or 4K with wrap around care[9] at London Bridges. The families of children in 4K at London Bridges had the option to enroll in a reduced rate wrap around care. In a conversation with another 4K community site teacher, Emma, during a PD class, Sadie recognized that even though there are challenges, "it's nice that there's two different forms of [4K]. Parents who need that wrap around have that." [Small group, 9/2011] Though Sadie remained frustrated with the financial situation of the 4K program, she saw benefits to various site locations and contexts.

This is not to say that London Bridges has not experienced success with 4K. Sadie shared her thoughts after the first year of implementing 4K:

> Well it's definitely been a learning experience. I mean we've kind of been trying to figure out how not only to be a 4K but a 4K in a center- What resources we have and who comes to us and who we ask for questions. It's definitely been a figuring out that one our part and the district kinda seems to be figuring out things that come up as they go that they hadn't really planned for...I mean we're making it. That's a success. [Interview, 05/2012]

Here, Sadie recognized that with the implementation of a new program there inevitably accompanies a learning curve and that unanticipated problems will likely occur with reactive solutions. One particular issue that arose was distribution of district supplied materials and toys for each 4K classroom. London Bridges received limited concrete material support from the Cappitown school district. Sadie assumed that since her child care center already had toys and age appropriate supplies for preschool prior to the 4K implementation, that the district only provided these materials to the elementary school sites.

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[9] Wrap around care is a service for children before and after official school times. For Sadie's classroom, this is before 4K at 8:15am and after 11:15am. This includes lunch, nap, and afternoon care by London Bridges staff.

Another resource that Sadie discussed as a difference between her ECCE site and elementary schools in the district was the curriculum. From years of working for the London Bridges Corporation, she knew the design and scope of curricular themes across the school year. The curriculum at London Bridges focused on predetermined "classic preschool theme" units that are implemented across all ages in the building. Sadie explains, "the 2-year-olds do have a theme for the whole month and then the 3-year-olds follow the two week theme but at like a lesser intensity because they're only 3. So then in 4K we take it and build on it." [Small Group, 10/2011] At the beginning of the school year in September, she explained that they begin with an 'All About Me' theme, followed by 'Family', and in October "Pets". London Bridges required certain materials to always be available to students, for example wooden blocks. Teachers were allowed to enhance learning areas. Sadie added thematic materials, such as excavators and bulldozers to the block area, to enhance the learning areas when studying the construction theme.

Sadie viewed implementing typical traditional EC curriculum in thematic units as having both benefits and drawbacks. One advantage was for the families. "I feel like parents want to feel like their kids are doing something, otherwise they feel like we're just reading random books and doing random things." [Interview, 09/2012] The curriculum also included sight word cards that Sadie was expected to do with her four-year-olds. Sadie did one word a week for 10 weeks and then moved on to the next group. She expressed that this activity did not feel natural or authentic and the children often look puzzled at her as she reviewed the words during a whole group, carpet time. Because of this, she generally did the required activity quickly and then left them out as a free choice option. [Small group, 04/2011]

For the most part, Sadie supported the thematic approach to curriculum, though in her opinion, particular topics fell flat for the entire class. She talked about the dinosaur theme as

being of interest to three boys but everyone else in the class was indifferent about the subject. "Whether they are bored or not, two weeks." [Small Group, 10/2011] Sadie commented that this topic was not relevant to her students' current lives and would rather focus on things that have value to them. She was unable to deviate from the designated theme, including the duration of the theme. Sadie was required by the corporation to cover the theme for two weeks; no more, no less. A construction project on the main street outside of London Bridges in October of 2011 captured the children's attention and Sadie longed to explore a construction theme with them yet that theme was not for a few more months. "I would love to just do it right now when they see the trucks and they smell the disgusting asphalt." [Small Group, 10/2011] Sadie also shared openly her aversion of the scripted nature of the curriculum.

> I wish I had more educational freedom…I have a big ol book of 'this is what you're doing at carpet time' and it even has bold letters of quotations of things that you can say to the kids, quote-unquote. If only there was a happy median where we had outlines and ideas but could kind of go with our own [words]. [Small Group, 10/2011]

At the end of the first year of the 4KPD, Sadie shared that she was beginning to find a balance between what the corporate curriculum required and her pedagogical beliefs and practices.

> The London Bridges curriculum is so structure, structure, structure. They give you two [small group activities] to do every play time and we have to do these and level one math and literacy. At the beginning of the year, I thought well, this is what we *need* to do because this is what we've been doing forever. We had to do the same [same group activities] for the two weeks of the thematic unit. But then it wasn't working for the children so I became more loosey-goosey and go with the flow to the curriculum. [Interview, 05/2012]

Sadie admitted a transformation in her approach to the corporate curriculum. Sadie kept the structure of small group activities during play time as required by London Bridges, however during the second week of the unit, she would alter the lesson and cover different concepts related to the thematic or academic focus of the unit.

Since the implementation of 4K, London Bridges also had the Creative Curriculum[10] series manuals at the site. London Bridges decided to retain their corporate curriculum and gave Sadie access to the Creative Curriculum materials. She mainly used the corporate curriculum though referenced the Creative Curriculum for extension ideas and to see how London Bridges curriculum aligned with other classes across the district.

In addition to the challenge of managing two curricula, Sadie incorporated the state's early learning benchmarks and standards. Though the two curricula suggest exactly what Sadie should do and say in the classroom, she viewed the standards and benchmarks as the supreme guidelines. "I've been doing a lot of [aligning standards and benchmarks], just figuring out what I should be doing." [Interview, 09/2012] Sadie felt that the prescribed and scripted curriculum reduced her professionalism and pedagogical decisions whereas the early learning standards provided her the freedom to design learning opportunities that are developmentally and culturally appropriate for her students. Sadie related this freedom with learning experiences that are relevant to her students.

> Funds of knowledge isn't really thought of in our curriculum really at all. We get our themes and that's about it. I mean, we can enrich it. I kind of do half that and half my own thing. There's some topics where my kids don't really understand it. It's not relatable to them. [Interview, 05/2013]

4.2.3 Sadie

The faint morning sun in June peeks through the blinds of three large windows at London Bridges Child Care Center. They provide just enough light in the classroom for the overhead fluorescent lights to remain off. Sadie and I sit in chairs intended for much shorter people at the corner of an equally low to the ground table. The other two tables in this child care classroom have chairs stacked three tall placed on them waiting for children to enter the room and hurriedly take them down for the day. Sadie's blonde hair is pulled back in a high bun with a large purple flower affixed to a black headband. The flower matches her purple corporate polo shirt. She has

[10] Community site child care centers were allowed to choose whether to retain the curriculum them had previously implemented for preschool or adopt the Creative Curriculum. The public school 4K sites were required to use the Creative Curriculum.

minimal makeup fair white complexion and has accentuated her eyelashes with mascara, making her face look vibrant and awake. I listen to Sadie reflect on her enrollment in the two-year PD classes. [Reflection Journal, 10/2011]

Admittedly an early riser, Sadie wanted to meet before her 8:15am work start time to talk about her experiences in the last year of the 4KPD, namely about the culminating action research project.

> It was definitely a community source for me because I'm all alone here, and I don't really get a chance to go to the [district's] Monday professional development that happens once a month or anything else really, so it was really the only community source that I have. So it was great to get lots of ideas and see what other people are doing and seeing the pros and cons. [Interview, 05/2013]

This desire to work with others that are teaching 4K and her feeling of isolation were ever present in Sadie's conversations. Through the 4KPD, Sadie learned about others' experiences in the district with implementing 4K and resources available to district-hired staff. In small group conversations, colleagues would mention resource contacts at the district administration building and a resource center that was open to all district staff to do lamination, check out materials, and make die cuts of images and letters. Sadie's struggle with this was that the resources were only open which during her work hours at London Bridges. [Small group, 02/2012] Yet again, Sadie did not have equitable access to district supplies and resources. When the 4KPD began, which coincided with the district's initial implementation of 4K, Sadie hoped the 4KPD would provide her access to colleagues. "I hope for a lot of great ideas and a lot of netwo-, not networking but like people that I can talk to and bounce ideas off of and kind of, because I'm the only one here so I have like nobody." [Interview, 10/2011]

Sadie's hope for the 4KPD was to learn some great ideas from others and to reflect on her teaching skills, such as what how she was doing with math, to see what she

could do better [Interview, 10/2011]. In a small group, Sadie initiated a conversation about longing for collaboration between those teaching 4K in elementary sites and those in community locations.

> Sadie: [Community site teachers] are kind of a little left out sometimes.
>
> Emma: Yes we are big time.
>
> Chela: The knowledge base being a combination of people who have been doing early childhood forever and those in play-based sites forever to be able to share that with people in the school district who have been working with more standards and more of that realm to come together more. It's needed, because 4K is really where those two worlds kind of come together.
>
> Emma: Yeah this is the equity part which here is part professional development and education.
>
> Sadie: Yes there's something about new ideas and self-reflection.
> [Small group, 09/2011]

Sadie was reassured that she was not alone in the desire to gain insight from others in the district and views the 4KPD as a space in which this partnership can happen.

The lack of access to the district offered PD trainings in addition to being the only district 4K teacher at her site solidified her admiration for enrollment in the 4KPD classes and being surrounded with other 4K teachers. "These classes are very important to me. Oh man, I would come back from Wednesdays and I'd have so many good ideas just from the ideas we get and the people that come in and talking to each other." [Interview, 05/2012] Along with peer-to-peer collaboration, Sadie also applied gained knowledge about mathematics and FoK into her practice.

> I've become a lot more aware of purposefully incorporating math. I would lean a little but more towards literacy in years past, but now it's more math, it's more intentional. I do a lot more thinking about math skills and about 'would these kids even be interested in it?' I'm not just gonna put it out because it's what the book says. [Interview, 05/2013]

The 4KPD classes challenged her to think outside of the box about mathematics and how what students' interests and knowledge they brought to school could influence her teaching. "I've always thought learning through play was important but I've learned a lot of things to put into their play and like areas to change and things that makes their play more wide-range." [Interview, 05/2012]

In addition to building on her prior professional knowledge of the importance of play, Sadie also possessed belief in scaffolding children's academic and socio-emotional knowledge. She saw her role as someone who would model language and promote student self-regulation.

> As far as social skills go, I do a lot of giving them the words to say and working with them to be problems solvers. I tell them to tell someone 'I don't like that' or 'please stop'. If we're playing a group game I'll working with one kid that is higher up in math or literacy skills and a kid who's maybe a little lower and then they can work together; because they really learn a lot from each other. I like pairing different strengths together because they help teacher others. [Interview, 10/2011]

Sadie often shared that she encouraged her students to solve problems independently. She commented that for many of her students this reflected lifeworld expectations and experiences. A majority of her students spent time outside of school learning with siblings and cousins through observation and direct participation in social activities.

Sadie admitted that she had prior knowledge about early mathematics and that she considered children's home lives but never in the depth that the 4KPD elicited. She commented that through her involvement in the 4KPD, her approach to mathematics in play was more open-ended. Sadie told her peers that she now found herself counting blocks or food during play rather than having a designated and direct activity of counting cubes or small counters at a table. The 4KPD courses challenged Sadie to de- and re-construct what she considered to be early mathematics learning.

Her prior knowledge of early mathematics, ECE, and acknowledging children's cultural experiences were influenced by Sadie's undergraduate studies and professional experience in child care. Growing up in Cappitown, her interest in working with young children began in high school. As a teenager, she worked after school for a few hours at one of the London Bridges corporate centers in the city. Then in the summer, Sadie worked full time when she was not in school. Interestingly, when Sadie went to college in the northern part of the state in Blue Sea, she worked for a London Bridges corporate center. Sadie attended Blue Sea University and earned a bachelor's degree in early childhood (birth-8years). Following graduation, she intended to work in a kindergarten classroom, "but kindergarten is kind of a little more hardcore than I remember it, so [4K] is like what kindergarten was like when I went to kindergarten so I like it a lot better." [Interview, 10/2011] She worked in a 4K classroom at a new child care center in a town east of Cappitown for one year after graduation, but found the placement was not the right fit for her. She returned to London Bridges when they adopted the district's 4K initiative.

Sadie's personal background shaped how she thought about FoK and her approach to learning opportunities for young children. She described her family upbringing as 'run of the mill'. Sadie grew up with heterosexual, married parents who lived in the same home. Sadie was excited to move home to Cappitown because "it's still where I grew up" though she was apprehensive to work for a large school district. [Interview, 10/2011] Sadie and her then fiancé (married in June of 2012) bought a house in Cappitown where she spent her free time playing with her dog and rabbit, scrapbooking, watching state sports teams, and completing various projects she found on Pinterest.

An admittedly very visual person, Sadie struggled with mathematics in her own schooling experience. "I wasn't good at math. I hated math. I *hated* math." [Interview,

09/2012] She longed to see the connection between trigonometry and geometry in real life. In seventh grade, Sadie took an algebra class and it was very problematic. But she did not let the difficulty detour her learning. She spent time after school with the teacher who gave her, what Sadie called, a pity 'B' grade because of her dedication to trying to learn the content. Unsatisfied with this grade, Sadie "took it in summer school 'cause I could not handle that B and I passed with an A in summer school." [Interview, 09/2012]

Sadie's tenacity and stubbornness was present in many aspects of her character. It was clear that when Sadie began something she did not quit. As in the algebra example above, she did not accept an effort grade and had the resolve to continue to strive for understanding despite her aversion to mathematics. Sadie's dedication was present in her post-bachelor degree work as a 4K teacher at London Bridges. She was devoted to her colleagues, classroom and the children and families in her class. She blurred the line between her own home and her experiences in the classroom. In the following example, Sadie shared a story about receiving a 'pretend birthday present' from one of her students, Mike.

> So I come to school yesterday, and he's like, "I have a surprise for you. I got you a birthday present". I'm like, "It's not my birthday." He's like, "Yes, it's your pretend birthday." "Okay, it's my birthday." So he comes and he's got this paper. It's like this thin, wrapped in snowman wrapping paper, and he's like, "Open it, open it!" And I open it and it's this big lionfish that he made out of paper. And it says- From Mike, this is a lionfish for you- and he was so proud of himself. It was hilarious, absolutely hilarious. I took a picture of it on my fridge and I'm gonna show it to him. [Interview, 05/2013]

Sadie's personal FoK was embedded in this action to take the gift home and showed the student that she valued his thoughtfulness. Mentioning that the lionfish was to be placed on her refrigerator reflected her own cultural values. Displaying the gift on the refrigerator demonstrated Sadie's belief that this item had significance that reflected a cultural practice from her own childhood and family experiences.

After the move back to Cappitown from Blue Sea, Sadie expressed an interest in working for the district as a teacher rather than the corporate child care center. The major pull was because the district salary was significantly more than the salary offered at London Bridges. Sadie expressed that she was "working real hard for the amount of money I make" [Small group, 05/2012]. The center director at London Bridges only hired people with degrees "and people with degrees [wouldn't] want the crap that London Bridges will pay them. I make fourteen bucks an hour and I had to fight, I had to go back and forth with [my center director] for that fourteen dollars." [Interview, 09/2012] At the time of this research, the district had a hiring freeze. When her colleagues encouraged her to pursue district employment as a substitute teacher, Sadie explained that she is "always worried, because you know, I need steady income. I have bills to pay." [Interview, 09/2012] Sadie understood the work of a substitute teacher from her experience working as the substitute for a woman going on maternity leave at the school where she did her student teaching in the Blue Sea school district. Sadie's resolve to stay in a job situation earning less than her colleagues at the district stemmed from the security and her commitment to working at London Bridges.

Sadie, who identified as an independent for political affiliation, remained unconvinced that large school districts were run well by government policies. She witnessed the large school districts in the state that closed buildings and had teacher layoffs due to enrollment numbers and building performance inefficiencies. In addition, she viewed district mandates as overburdening workloads. Even with these views, Sadie still desired a career in the Cappitown school district as a teacher because of the higher salary and increased prestige of this position. At the end of the second year of implementation of 4K in the district, Sadie was hired to work for the district as a

summer school teacher and remained at London Bridges for the next school year[11]. She continued to long for connection to other 4K teachers; especially those at community child care centers. "I mean to talk to anybody or even like emails or some share [website] for community sites cause it's, I mean it's still 4K but it's different…just to see how other community site people balance it." [Interview, 05/2012]

4.2.4 Sadie's Focal Children

Clara, a boisterous and tall curly-haired bi-racial four-year-old, was enrolled in Sadie's 2011-2012 morning 4K class. Clara lived in a two-level apartment with her single mother, a six-year-old sister (different father than Clara), a two-year-old brother (with mom's boyfriend), and her mom's boyfriend. They lived in a large apartment complex in the Oakcrest neighborhood. [Sadie, HVR] Clara and her two siblings shared a bedroom in the upper level and mainly played upstairs. Clara's mom, a twenty eight year old Caucasian woman, dropped Clara off everyday and worked a full-time job mostly on weekends because she attended school part-time during the week. Because of this schedule, Clara's mom always appeared to be in a rush at the school. "Mom is doing it by herself, so it's hard. Clara's mom has an aggressive tone with children when she is in the school. She's very loud, very yelly but she is not like that to me or other adults." [Small group, 01/2012] "Clara never knew her real dad who is African American. Her mom's boyfriend kinda took her in as his own." [Small group, 10/2011] Clara has attended London Bridges since she was a toddler and her older sister was in Sadie's preschool class. [Small group, 10/2011]

At school, Clara preferred to play in the dramatic play area with other female peers and literacy activities. "She is very much the mother hen of the class, very nurturing. She makes

[11] In the fall of 2014, Sadie did secure a job in the Cappitown school district as a kindergarten teacher at an elementary school.

sure everybody's okay. If there's a hurt kid, she will arm hold them and walk them over to me." [Small group, 01/2012] She's a "girly girl who enjoys sorting colored gems and beads. She ventures into the block area toting a whole bunch of housekeeping things to create this big elaborate family with blocks." [Small group, 02/2012] Clara's interest in female gendered toys was also present at home. She had a Barbie collection, enjoys watching Dora the Explorer and had princess themed toys. [Sadie, HVR] The family played board games at home as well as "take home" games from school. Clara, whose birthday is in April, responded by holding up three fingers when asked how old she is yet she knows that she is four-years-old. [Small group, 01/2012] Though math was a struggle for her, Clara enjoyed new learning activities. She had one-to-one correspondence counting up to 14 and could recognize the numeral 1 which is usually her guess when Sadie did the estimation jar at circle time. [Sadie, FMNR]

Kyle, a gregarious and loquacious child, was enrolled in Sadie's 2012-2013 morning 4K class. He lived in a house a few blocks from London Bridges with his mom, dad, and older sister. Kyle's grandparents, uncle, aunt, and cousin, Oscar, all lived near his families' home. Oscar was also enrolled in Sadie's 4K class. Kyle's parents and extended family are from Kosovo and immigrated to the United States. Kyle's immediate family, uncle, aunt, and cousin speak English well. [Small group, 11/2012] Kyle's grandparents only speak Albanian. And all family homes strictly enforce the rule that only Albanian is spoken at home. [Sadie, HVR] The families' use of Albanian was present at London Bridges too. "Even when his parents pick up they'll sit in front of me and converse. Then every once in awhile she'll turn and start talking to me in Albanian and then go, well he said, blah blah blah. But it's good. I like hearing it." [Small group,

11/2012] Kyle is dropped off early in the morning and picked up every day by his dad around 3:30pm. [Sadie, HVR]

At school, Kyle was social and flitted around the classroom engaging in different play and with different children. He was the oldest in the classroom, with his birthday is in September, and actively partook in sarcastic exchanges with adults. [Sadie, LS.Obs] Kyle enjoyed doing small group activities and eagerly participated in whole group carpet time. Since Kyle was in Sadie's preschool classroom last year, he knew her style and routine well and was a natural leader. He was academically advanced for his age and enjoyed math activities. [Sadie, LS.Int] Kyle could count to 100 and solved basic math word problems easily. [Sadie, LS.Int] At home, Kyle's favorite activity was to play with the family's Nintendo Wii gaming system. "He has a million and a half Wii games and his mom wants something besides video games to spark his interest and she can't find anything." [Small group, 11/2012] He also enjoyed having 'homework time' with his older sister.

Table 3: Focal Children

2011-2012					
Teacher	Focal Child	Gender	Lives with:	Ethnicity	Home Language
Sadie	Clara	Female	• Mom • Two Sisters	Bi-Racial: Mother is Caucasian. Father is African American	English
Shelly	Nick	Male	• Dad • Mom • Sister (2 years old) • Maternal Grandfather	Tibetan	English and Tibetan
2012-2013					
Teacher	Focal Child	Gender	Lives with:	Ethnicity	Home Language
Sadie	Kyle	Male	• Dad • Mom • Older Sister	Albanian	Albanian
Shelly	Donte	Male	• Mom • Older Brother (1st Grade • Maternal Grandmother	African American	English

4.3 Shelly's Profile

4.3.1 Blue Bush Neighborhood

Located seven miles southwest of city's center, the Blue Bush community surrounding Shelly's school is a quiet residential neighborhood. [Reflection Journal, 3/2013] Just one mile south of a major highway that surrounds the city, the Blue Bush neighborhood around Grayson Elementary is on the border between Cappitown and a neighboring town. The private winding roads leading to Grayson are connected to a main street that has many city bus routes passing throughout the day. [Field Notes, 02/20/2013] One mile to the east of Grayson is a golf driving range and mini golf park, a Mexican grocery store, and a handful of small businesses. [Field Notes, 02/20/2013] One mile west is one of Cappitown's largest community parks that includes soccer fields, public shelters, disc golf, ice skating and hockey rinks, and a large sledding hill. About two miles north of the elementary school is the city's large shopping mall including fine dining and fast food restaurants.

Houses in this neighborhood ranged in size and style. Majority of the homes in the Blue Bush neighborhood were contemporary, large single-family homes with some single-level, ranch style homes scattered amongst them. Average market price for houses in this community in 2013 was $191,490 [Neighborhood Association Website, accessed 2014]. The estimated percent of persons living in the Blue Bush neighborhood identified as 53.5% White, 18.3% African American, 4.4% Asian, 4.1% Other or multiracial, and 9.7% Hispanic or Latino. [Neighborhood Association Website, accessed 2014] The median household income of this area was reported as $55,515. This neighborhood community has three public parks. One park west of Grayson has a tennis court and a large climbing structure. One park near the main street leading to Grayson has swings, fenced basketball courts, and a climbing structure.

People in this neighborhood walked dogs, walked children to school, and gardened before and after the time of school. [Field Notes, 02/20/2013] Transportation for Grayson Elementary was a mixture of family drop-off/pickup and school district buses. With most of the enrolled population at Grayson dropped off by family cars, the street in front of school was a busy place and difficult to drive down before school began. There were a range of automobiles, from Range Rovers and other sport utility vehicles to older compact cars and minivans. [Field Notes, 02/20/2013] Adults and older children assisting with student drop off in the morning were outside of the school near the crosswalks and street corners. The older children appeared to be between the ages of 10-11 and wear orange safety cadet belts. The older children said 'good morning' to adults as they walked by and each morning a group of children sent the school flag up the pole.

4.3.2 Grayson Elementary School

After the buzz of cars and buses had dissipated, a single-level, 1950s style brick building atop of rolling hill is prominent in this residential neighborhood. Tall, old trees that provided shade and mirrored the look of home on the block were scattered around Grayson Elementary. A large sign with the schools' name on it was in the middle of the west side of the building. To the south end, there was a medium sized parking lot with a small traffic sign that reads restricted for personnel only. The parking lot was adjacent to the main entrance of the school.

In the late 1990s, Grayson was remolded and an addition was added. Included in this construction was the installation of wheelchair access doors. To enter Grayson, a small silver box with an attached camera and small doorbell button is affixed to the right of the main doors. Once the main office identifies the guest, student, family, or staff, the automatic doors are opened. This main entrance to the 4K-5th grade school off the staff parking lot was the entrance to the new addition. On this far south end of the building is the gym, kitchen, music room, and other staff offices, e.g. social worker and itinerate staff. There were laminated motivational posters on the walls in the hallway. Some posters advertised the school-wide behavior intervention program and others are words about supporting cultural diversity. The largest wall hanging was a printed banner with the elementary school's name and mascot.

About 20 yards from the entrance doors was the main office on the left side of the building. To the right was a hallway leading to 4th and 5th grade classrooms. The main office had two female administrative assistants who worked behind a large desk across from the principal's office. Past the main office, the hallway continued in the shape of a capital L. There were classrooms, lockers and bathrooms on both sides of the hallway. The early childhood special education rooms (ELS) are next to the main office on the left and are followed by 2nd

grade classrooms. The hallway turned right at the end and lead to more classrooms. Shelly's classroom was the second door on the left side. The classroom door and area around it was decorated with children's artwork and a large class collage of names.

[Field Notes, 02/20/2013]

Early childhood classrooms were not a new concept for Grayson Elementary. Prior to the Cappitown preK initiative in 2011, Grayson was a site location for a district special education program called Early Learning Session (ELS). This classroom served children ages 3-5 who were identified by assessment screeners as qualifying for early intervention or special education services [Cappitown District website, accessed 2014]. The classrooms also enrolled children as 'peer models' 3 years of age, who are selected through an application process by the district to model age-appropriate self-help, language and social skills. [Cappitown District website, accessed 2014] All children enrolled in the ELS program attended a partial day program four days per week. When the children in the classroom turned four, they moved to the 4K program offered through the district.

Grayson was one of four elementary schools in the district to offer this ELS program. When the school district implemented the 4K initiative, many of the children enrolled in this program remained at Grayson and enrolled in Shelly's classroom. Interestingly, Shelly was the ELS teacher prior to the initiative. In her willingness to move to 4K, three of Shelly's students from her early learning session class transitioned with her into her 4K classroom. One benefit was that Shelly began the school year aware of the children's individual skills and needs. "I had that relationship already. When they came back to me they knew the routine, they knew things." [Interview, 05/2012] Having this pre-established relationship was key for Shelly. For example, Shelly describes her knowledge of Kevin, a student she had in the ELS. "His cognitive delays are about two years below and he's going to be five in July. He has some physical needs too, but he has had me as a teacher, he knows me." [Interview, 05/2012] Families also found this

relationship important and ensured that their children were her students in 4K. Jason was a peer model in Shelly's ELS classroom for two years and "his mom went downtown to make sure he got into my 4K even though he [wasn't] in the neighborhood district." [Interview, 05/2012] Rather than being enrolled in his neighborhood school, Jason's mom and Shelly had a "good relationship". While his family was deemed important for the child's success, Shelly also recognized that it will be time for Jason to move forward into kindergarten and learn from someone new. Shelly expressed concern about her next school year because she has at least six children enrolled in her class with special needs and does not have this previously established relationship.

Having one third of her students labeled as having special needs, Shelly's classroom was a space that had many support staff and teachers coming in and out throughout the day. "I don't feel like it's an imposition to have people in and out. I know some people do. It's like, 'this is my space and don't come in'. You know for me, it's more like we work as a team as much as we can." [Interview, 05/2012] Due to her previous work in child care where there were always people in and out of the room, Shelly appreciated the work of itinerant staff. She also understood the fluidity of their schedules and that they often came into the classroom solely to observe one particular student. [Small group, 05/2012] "It doesn't bother me at all. You have to be flexible [be]cause the [occupational therapists] and [physical therapists] are serving the whole school and sometimes they'll have to come in and say 'I can't meet with them this time' and you have to say, 'well we'll just juggle our schedules and make it work.'" [Interview, 05/2012] Even with the constant flow of other adults in and out of the classroom, Shelly's students tended to find routine and comfort in their presence. When the bilingual resource

teacher comes in the room, "the kids know that Kevin goes with her. He's been going all year and they know." [Interview, 05/2012]

Shelly recognized the importance of knowing the families of each child in her classroom for family involvement. In previous jobs, Shelly conducted home visits in order to connect with families. Shelly approached family involvement in her classroom and at Grayson by maintaining an open line of communication with families. "When you have that relationship, families feel more comfortable opening up to you about things because they know you're interested in them. It's kind of a back and forth." [Interview, 05/2013] Throughout the school year, Grayson had open house nights where families and other people from the community could come to the school to hangout in the library, computer lab, play basketball but the classrooms were not open. [Small group, 11/2012] Shelly recognized this school-wide goal to increase family involvement has barriers.

> I think we've done a lot of work as a building to get culture into the school and are really working on family involvement. It's a lot more difficult. It sounds great when we say we're going to be doing this, but it really is a challenge because there are so many variables in families' lives. There's a lot of different pieces that make it challenging, but I think as a school, we've been really trying to work on that. [Interview, 05/2013]

Shelly made herself available to meet at the school and at children's homes on her personal time in order to build these connections. Because of she had family commitments of her own in the evening, Shelly had yet to attend one of these open houses; however, she still encouraged her students and families to attend the events. [Small group, 11/2012] "I'm pretty flexible and patient with things in general…I understand that it's not really about me here. You know, this is about the child that we're trying to teach and develop the children's strengths." [Interview, 05/2012] This flexibility extended beyond her contractual work hours and Shelly often

referenced taking her work home with her. Shelly worked "off the clock" by coming to work earlier and staying later then the Grayson school hours of 7:30am-3:00pm.

In the first year of district 4K, Shelly noticed that her students struggled to 'play well together' and build strong relationships. She speculated, "I think it is because there's just so many different kids coming in with different backgrounds and different cultures and they're all trying to mix together and it's really difficult sometimes" [Interview, 05/2012]. As the year drew to a close, Shelly considered multiple factors that contributed to this classroom dynamic. A fellow PD participant, Janet, who took over Shelly's previous role as the ELS teacher at Grayson, added that there were over 70 different languages spoken by families enrolled at the school and categorized Grayson as a "low socioeconomic school". [Small group, 01/2012] Shelly reflected that her morning class "is extremely diverse. I have [children who are] Hispanic, African American, Tibetan, a child who speaks Farsi, and a Caucasian boy. There's different cultures coming into play." [Interview, 05/2012]

Shelly's awareness of the multi-cultural, -ethnic, and –racial demographics was reflective of "district and school agendas to be more culturally relevant to focus on how children learn differently and how we can help them." [Small group, 09/2011] There was a Spanish bilingual 4K classroom next to Shelly's classroom for families interested in enrolling their four-year-old children in a Spanish bilingual program. In addition, Grayson elementary had a Spanish bilingual resource teacher on staff and she provided services to all of the classrooms in the building. Shelly did not anticipate receiving language support for her child who speaks Farsi because the district and Grayson elementary did not have that type of support available.

Though she saw diverse cultures and lower numbers as a challenge, she later in the same conversation addressed the benefit. "Kevin's become very independent and he has a lot more

language skills, so that's been a positive for having lower numbers. And I think having the different cultures and things has been nice because the kids then bring that to the classroom." [Interview, 05/2012] In an example about child contributions to curriculum, Shelly found value in both a larger and smaller groups of students.

> We were doing animal studies and we had a zoo out and we explored where the animals lived, so we got the globe down. And there was a lot of interest in that. Then we can kind of do those easier because there are more kids that can give their input to it. So we went to the fire station one time in February and the kids generated the whole fire station we had in our classroom; like what we needed and what we could do. We had a fire station for a month in here and they just loved it. It was nice because you can look at the kids more and target them. You're not kind of bustling around doing a million and one things. [Interview, 05/2012]

Shelly acknowledged that a smaller class size benefits one-on-one attention along with the in depth contributions of more children in the room. Regardless of the number of children enrolled, Shelly reiterated the desire to have all children present daily to ensure consistency between them, the staff, and for the curriculum.

In addition to the consistency of staff and pedagogy, Shelly wanted her students to be present each day at school. Children enrolled in the Cappitown district 4K program were not mandated to attend school everyday. This was different than her previous experiences. In her previous child care job, "we had kids all day and they were consistent in coming cause parents brought them cause they were working. So now I'm finding with 4K that we're having a lot of families that don't come as consistency because it's voluntary" [Interview, 05/2012]. In a conversation with a colleague, Shelly pointed to families' unease with sending a 4-year-old to school based on the families' personal previous experiences with school. She explained that often older generations (e.g. grandparents) have expressed discomfort with this notion because their experiences were that children began school at six or seven years of age not at 4-years-old. In addition, Shelly added that some families withdrew their child after enrollment because they

didn't realize that they 4K program was only 3 hours each day. Due to this, Grayson elementary had experienced fluctuating numbers of students enrolled in 4K throughout the year.

For Shelly, sporadic and low attendance rates were unappealing. "I actually would prefer fifteen every day. To me that feels a lot nicer than having low numbers. People don't understand that when I tell them…. because [with consistency] it becomes more of a sibling relationship between children." [Interview, 05/2012] For example, the morning section of her first year of 4K struggled to "click as a group cause there's not enough of them and they can't quite figure it out." [Interview, 05/2012] Also during the first year, Shelly's morning class experienced constant fluctuation in enrollment numbers. By the end of the first year of 4K, Shelly's classroom had lost 8 children due to "moving to different schools, different centers, staying home, or because families couldn't get them back and forth." [Small group, 05/2012] Due to low numbers of student attendance, Shelly and the other early childhood classrooms would combine their morning classes, which she says felt was artificial.

Regardless of the children's age, Shelly recognized that there are certain practices that are learned at school that are different than at home. She reflected at the end of the first year that children learned cultural expectations and behaviors as much as they did academic skills.

> Even going to the bathroom. At the beginning of the school year, I had a student who would just kind of forget where he was and when he decided to go to the bathroom, he'd pull his pants down and run in the classroom restroom. He didn't have a clue how to do it any other way because his whole life- that is what he did. So now I have seen them grow a lot in terms of independence and what they know to do here at school. [Interview, 05/2012]

Shelly's example of the young boy demonstrated her belief that there are particular cultural practices present within all contexts that people inherently learn. Because school typically has different rules and materials than home, young children socially and culturally construct 'schooling FoK'.

For nine months, Shelly worked tirelessly to get her students to be a cohesive group and play well together though reflects feeling unsuccessful. "We've tried different strategies and we're kind of down to the last wire here but we've tried having different peer groups together doing different activities" [Interview, 05/2012]. This was a new experience for Shelly. Throughout her first year of 4K at Grayson, Shelly struggled to unify her students as she grappled with 4K being incorporated and respected in her preK-5th grade building. "We're welcome to come to some of the things like assemblies but there's some that are just not gonna be relevant to our children 'cause some of the older kids are getting awards and it's like 'what's happening?'. But when we have fun activities the 4K kids can get engaged in them." [Interview, 09/2011]

Grayson Elementary used the Creative Curriculum in 4K to promote the 'learning through play' initiative adopted by the Cappitown school district. Shelly extended the provided curriculum through thematic units. Shelly transformed the different learning areas to reflect the theme for about 2 weeks at a time. When possible, Shelly incorporated field trips to support the unit, such as the dairy farm, children's museum, and the apple orchard. Shelly recognized that what works for a particular unit did not necessarily work for the next and modified the curriculum to meet the interests and engagement of her students.

> Like our sensory table has been a huge thing all year. So we had a time when we had a garden out and they were growing things. I thought for sure they would be interested in having dirt and things in the table and nobody really wanted to play there. It just wasn't an interesting substance for them and they didn't like being dirty. It was interesting because they loved the flower shop that they could do flower arrangements and put flowers in the pretend Earth. They loved it. But then the real dirt, the real planting wasn't really as exciting. I've only had a couple kids that have been interested in seeing how things are growing. But they love the pretend plants. It's not that I wouldn't never do it again cause it just would be based on the kids but for the group I had this year, it wasn't a big hit. [Interview, 05/2012]

Shelly used thematic materials and resources to enhance various learning areas. When a student asked for a particular supply or item that was not currently available in the classroom, Shelly happily brought it from the closet for the children. This child-initiated play challenged Shelly to rethink her approach to two week, thematic units.

> So I've found that it's less of me creating a theme and 'we're doing this for two weeks and then we're moving on to this' and it's more of doing it based on how things are flowing. We might leave a unit up for a month and it it's not going well we might take it down after a week. [Interview, 05/2012]

In making child-initiated play the foundation of her pedagogy, Shelly found that she was able to observe children problem solving before she intervened to redirect the play and that there isn't always one 'correct way' to do something.

> I've also learned that not everything has to be 'right'. Like the math game that I had out at a table this week with farm animals that had a specific number of farm animals on each barn. I didn't have the same number of farm animals in the basket and I thought, I wanted them to really think about it. I want them to think about problems and how they can solve them so I am not always giving the answer." [Interview, 05/2013]

Shelly encouraged her young students to problem solve and share their learning experiences with peers. This demonstrated a melding of Shelly's personal and professional FoK. "This is a really rich thing for children to do, you know, learning through play." [Interview, 05/2013]

4.3.3 Shelly

Shelly removes her Home Depot canvas work apron from around her waist. She lays it on her paper and art project covered desk and comes over to one of the 5 child-sized classroom tables. Shelly sits, smiles at me, takes a deep breath then pops up from the chair saying, "Oh, I need my water." It is middle of the afternoon in May and Shelly has finished teaching her second group of 4 -year -olds for the day. Days leading up to the end of the school year were uncharacteristically cool for the state and this particular day was a warm spike. Shelly had the children outside on the playground for an art project followed by free play before the end of the school day. She said goodbye to the last child and parent before sitting down to talk with me.
[Reflection Journal, 05/2013]

You would be hard pressed to spend time talking with Shelly and not be engrossed by her use of plurals. Rarely did she use singular pronouns to describe her professional practices as a

teacher and colleague. Shelly's use of 'we' and 'our' were ever present in her discourse about education and as she reflected on the value of participating in the PD program over the past two years.

> All these things that we struggle with our students, it's just interesting to me that we'll be able to come back with all these wonderful ideas to incorporate these into our classroom. I was getting some fun ideas on, just ways that we can bridge those gaps that we're seeing with some of the kids and also bring it up higher. [Interview, 05/2013]

In addition, Shelly shared that the 4KPD program gave her access to teachers across different contexts within the Cappitown school district. Shelly's tenure as an EC educator and a life long learner provided her opportunities to attend multiple conferences and PD programs over the years. She recalled the lack of concrete material and personnel resources when she began and that she had to acquire and learn a lot of her own. She viewed this experience as knowledge to be shared with novice teachers in the profession and teachers who may find it overwhelming to shift from teaching a different grade level to 4K.

> And coming down to this level, for me it's natural but for a lot of people it's really difficult. I know a lot of people in the district that move from kindergarten down to 4K struggled with that. They thought it would be this easy job and it's not. It's actually more challenging 'cause it's constant re-thinking, removing your lesson plan that you planned when it is not going to go well because you have this going on. You have to just juggle and think and put out fires all the time." [Interview, 05/2012]

Though Shelly viewed this adjustment to 4K natural, in the fall of 2012 as she began the second year of 4K and the PD she addressed areas of personal struggle and set goals for the year to come. She wanted to focus on scaffolding and how to "move their play and their learning appropriately." [Interview, 09/2012] Shelly was confident that she could incorporate more mathematics into play yet adjusting her daily routine and schedule posed a challenge for her. For whole group times, she aimed to find a balance between different EC content area such as literacy, social-emotional curriculum, gross motor, and mathematics.

For some EC educators, a focus on thinking about mathematics is a step away from a predominant focus on literacy trainings. Shelly acknowledged this focus on literacy yet drew attention to the value of mathematics in the EC classroom. "When you walk into a 4K classroom and you see what's happening, there are so many opportunities for so many different math experiences to happen naturally…they recognize patterns everywhere and are pointing them out to me." [Interview, 05/2013] Shelly attested being more cognizant of mathematics in play from the 4KPD program. "It makes me wonder if maybe that always was happening (children noticing patterns and counting in play) and I just hadn't been as aware of that because I was focused on letters." [Interview, 05/2013] In her limited amount of time with the children each day, she wanted to find a balanced focus on literacy, mathematics, and social skills.

What she found to be the most influential through the 4KPD program was "discovering the language for it because I've done it but didn't have the words for what we're doing." [Interview, 05/2012] In addition to gaining the terminology and confidence to explain about her practice, Shelly's overall take away from the 4KPD program was that math is embedded in all aspects of the classroom. "If you were to look in our classroom at any given time, there's a lot of kids that are doing math experiences that don't look like math experiences." [Interview, 05/2013] When describing mathematics in the block area with children's use of ramps, Shelly quickly switched to imaginative play in the dramatic play area. "At the kitchen area too, where they're counting out different items of food for each other and the pattern chips over there have been huge. They bring them out all the time and they pretend they're food." [Interview, 05/2012]

In the various contexts Shelly has taught over 15 years, she emphatically stated her love of teaching early mathematics. This stemmed from her personal FoK. "I liked math for the most part. I enjoyed it. It came easily." [Interview, 09/2012] Her teaching of mathematics was

noticed by a local school district near to Cappitown and she was asked to facilitate a workshop for teachers about early mathematics. Shelly drew from her personal experiences as an enthusiastic math learner to inform her teaching practice in 4K and helping others understand math in ECE. Shelly shared a story that when she was in second grade and the class was reviewing math facts, she had a revelation about the 'special nine trick' when adding nine to a number. She tried to explain to her teacher that she conceptualized it as a reverse subtraction problem and the teacher was flabbergasted and disapproved of her strategy. This experience is stained into Shelly's brain as a pivotal moment for her.

> Thinking back now and seeing how we teach now is more process orientated and then I wonder how much I had lost because I'm like 'I'm just gonna do what the teacher says. I'm not gonna think differently.' Then with math in my classroom, I think about what can I offer these kids to keep them excited about it and wanting to be in school. [Interview, 09/2012]

Shelly often drew from her personal FoK to inform her practice and acknowledges the power it has on her beliefs and values as an early childhood educator. "I look back and think that my experience was so homogenous. I grew up in rural Iowa where everyone was the same religion, pretty much the same race and social economic status." [Interview, 09/2012] When Shelly began high school, her family moved to a more urban city in this state and that is when she began to recognize and understand diversity. "It was such a crucial point 'cause I was finding out who I am and it was so good to have my eyes opened really wide." [Interview, 09/2012] This awakening to diversity continues to impact her personal and professional FoK as she reflected a continuous self-evaluation of openness and acceptance of diverse populations and cultural differences.

Returning to school after taking time post-high school to start a family, Shelly went to a local technical college to earn her associates degree in ECE. She worked in a child care center as

a co-lead teacher where the population increasingly included children with special needs. "I was really interested in working or finding out more about how to work with [children with special needs]." [Interview, 09/2011] The children in this program were pulled out sporadically for services, though they came back to Shelly's classroom for the remainder of the day. "So [Shelly and her co-teacher] really had them for the bulk of the day. So we collaborated with the teachers a lot and I really was interested in that aspect of it." [Interview, 09/2011] Concurrently about ten years ago, there was talk about launching a 4-year-old kindergarten program in the Cappitown school district. "I was real excited about [this idea] and then that kind of prompted me to go back and get my degree too. Cause I was like, 'oh I really want to keep teaching [preschool] and I don't know what's gonna happen if I just have my associate degree." [Interview, 09/2011]

The combined interest in special education and potential local policy changes inspired Shelly to return to a local independent liberal arts college in pursuit of a bachelor's degree in regular, special, and early childhood education (birth through 8 years). This experience included "a lot of opportunities for practicums and different placements." [Interview, 09/2011] Shelly's placements included preschool in an affluent child care center inspired by the Reggio Emilia approach, kindergarten and first grade at a elementary school, and early childhood special education program housed in an elementary school. The final placement lead to a full time position in the Cappitown school district at Grayson school, where she taught the ELS program "where half of the class were peer modeled and half was special needs children" [Interview, 09/2011]. After a few years teaching this program, Shelly became a 4K teacher when the Cappitown district initiated a prekindergarten program.

Shelly's education and experience in early special education had lasting effects on her pedagogy and practice in 4K. She understood the need for flexibility in working with other staff

yet expressed the value of consistency of pedagogical approaches for children's social/emotional and academic skill development. "[The other 4K teacher] and I are the two teachers in the rooms. Then we have assistants that come in, then we have occupational and physical therapist, and different people coming in the rooms. We just have different philosophies on things. So it's been kind of a struggle to figure out." [Interview, 05/2012] During the first year of 4K, Shelly and the Spanish bilingual teacher next door shared an educational assistant. The second year of 4K yielded higher enrollments, which gave Shelly her own classroom educational assistant, Marnie, for both her morning and afternoon session. Shelly acknowledged that the children observe the difference in their teaching styles. "It's hard because the kids do recognize that and so then it becomes more of a challenge on how to make that flow. I think it would be helpful just to have one person who's here with the kids, then you can develop that relationship and develop your styles of how you're going to handle things." [Interview, 05/2012]

4.3.4 Shelly's Focal Children

Nick, a reserved and inquisitive Tibetan-American four-year-old, was enrolled in Shelly's 2011-2012 morning 4K class. Nick, whose birthday is in summer, lived six blocks from Grayson in the Blue Bush Neighborhood. He lived with his mom, dad, two-year-old sister and maternal grandfather in a duplex. Nick's uncle, aunt, and cousin (who is several years older than Nick) lived above Nick's family in the second level of the duplex. Nick's dad immigrated to the United States twenty years ago and quickly acquired citizenship. Nick and his younger sister were born in America. All members of the family speak Tibetan at home and Nick and his parents are all fluent in English. Nick's mom worked at a local grocery store and his dad owned a cleaning business. [Shelly, HVR]

At home, Nick enjoyed playing Wii video games and especially on his new iPad. One early learning application game taught him numbers and had him identify numbers around the house. At school, Nick was able to point to "numbers on the clock and is interested in asking what those number mean in relation to how much time was left to play." [Shelly, HVR] "Nick grew up counting things, such as prayer beads, with his father which may have contributed to his interest in math." [Shelly, HVR] During free play, Nick frequented the block area, enjoyed doing art projects and playing with the geoboards. From the first few weeks of the school year, Nick demonstrated high level math skills for 4K and incorporated counting skills and symmetrical patterns naturally in his play. [Shelly, LS] "Nick can count fluently to 39 in English, and enjoys counting how many children are in the classroom, always counting who is there and who is not." [Shelly, FMNR]

Donte, a tall, solid, and active African American four-year-old, was enrolled in Shelly's 2012-2013 morning 4K class. He lived in Ellsworth neighborhood. It was mainly a commercial area, made of apartment and government assisted housing units, and had high issues of crime and safety [Neighborhood Association Website, accessed 2014]. Donte, whose birthday is in the late spring, attended Grayson by bus because the elementary school in Ellsworth did not have a 4K classroom. [Shelly, HVR] Donte lived with his mom, grandmother, and older brother. "His mother was currently in school working on a degree in Criminal Justice, and she shared that she is extremely excited to have the opportunity to have him go to 4K in addition to day care." [Shelly, HVR] Donte's grandmother volunteered often at the school. Donte's older brother attended first grade in a dual language immersion school in Ellsworth where Donte would attend

kindergarten. "His mom wants Donte to be reading in English before he's immersed in Spanish next year." [Small group, 11/2012]

Donte loved playing games at school where he rolled a die or counted numbers on cards and he enjoys manipulating the magnetic blocks. [Small group, 01/2012] He enjoyed math related activities and demonstrating his knowledge at school. [Shelly, LS.Int] Donte could subitize quantities when they are in a row or pattern, such as on a die, but not when they are jumbled or a different sequence. [Shelly, LS.Obs] At home, Donte enjoyed playing cards, video games, and Teenage Mutant Ninja Turtles.

Chapter Five Findings

5.1 Introduction

In this chapter, I examine how Sadie and Shelly made sense of and enacted funds of knowledge. I do this by focusing on three broad themes: Knowledge of Funds, Enacting FoK, and Conceptualizing FoK. In the first section, Knowledge of Funds, I lay out how Sadie and Shelly learned about their students' everyday lives and cultural resources. This includes how the teachers identified children's FoK both in- and outside of school. In the Enacting FoK section, I explore what factors Sadie and Shelly used to enact FoK. I examine their action research projects along with their intentional and spontaneous curricular decisions, classroom environment, and verbal interactions with young children. In the final section, I present how Sadie and Shelly made sense of the FoK framework. This section captures their conceptual evolution over the two years enrolled in the 4KPD and highlights their thinking in multiple contexts: small and whole group conversations, interviews, artifacts, and classroom observations.

5.2 Knowledge of Funds

An integral part of the process to understanding the FoK framework is recognizing and identifying children's and families' cultural resources and practices (Moll, et al., 1992). To accomplish this teachers use ethnographic methods to study the lives of their students. Teachers observe the child and families' social interactions, daily practices, and cultural activities. Theoretically, this allows teachers to see that the contexts of home and school are rich with various resources as well as informal and formal learning experiences (Villegas & Lucas, 2002). Thus the teacher is able to see the child outside of the school context as a multidimensional being not just a student (Moll, et al., 1992).

Because the space of the classroom may not reflect the child's social and cultural experiences at home and in the community or *lifeworld* practices, the teacher's understanding of the child may be thin and one-dimensional (Moll, et al., 1992). To counter this, Sadie and Shelly used ethnographic home visits and family interviews as tools to expand on their initial understandings of their focal children. They saw ethnographic home visits as a way to deepen this partnership by informally learning about families' cultural practices and social networks in a more familiar context for the family (Duncan, Bowden, & Smith, 2006). Crossing boundaries and making connections among people and places are at the heart of ethnographic praxis. Sadie and Shelly merged this process along with their prior knowledge of students to shape their approach ethnographic home visits.

Teachers enter the world of ethnography and learn to be participant observers of children, families, and communities to rethink the influences on children's learning and see cultural practices in multiple contexts (González, et al., 2005). For many teachers, labeling intentional and formal teaching in the classroom as learning may come with ease. What is challenging is entering an unfamiliar space to identify cultural practices and learning. Most often teachers adopt the "I know it when I see it" mentality. Sadie and Shelly had strong pedagogical knowledge of both content and EC theory and experience in identifying learning embedded in play. They used this professional FoK to assist them in identifying embedded learning in children's homes. The teachers then individually and socially reflected on these experiences to digest and make sense of their observations. They used these insights to determine a child's FoK and how it may be used successfully to frame academic learning experiences.

This section examines how Sadie and Shelly learned about their students' everyday lives and cultural resources. Sadie and Shelly selected focal children with whom they would conduct

formal ethnographic home visits and family interviews. These home visit experiences occurred after the school year had already begun which meant a relationship with the child and potentially the family was already established. I begin this section by presenting Sadie and Shelly's previous knowledge of children's lives outside of school and ways they gleaned this information. I follow this with how Sadie and Shelly engaged in ethnographic home visits to understand children and families' FoK.

5.2.1 Previous Knowledge of Students

Within weeks of the school year, Sadie and Shelly knew their students' skills and interests. This knowledge was shaped by the context of schooling, in conversations with family members, and what students exhibited directly to the teacher or with classmates through interactions with materials and concepts. Though the depth of knowledge varied by child, Sadie and Shelly shared in the 4KPD program that they had a general sense of all of their students' lifeworlds. In a small group conversation, Shelly shared, "I've had brief interactions with parents, trying to gather information that I thought was important but it was pure speculation. I was basing it on what I have seen in the classroom and the information that I had." Sadie added, "Yeah, I just did a lot of assuming. I talk to the mom on a very regular basis, when she will stay and chat. But at this point I haven't been on a home visit [to see for myself]." [Small group, 10/2011]

From traditional family involvement practices, such as conservations at drop off/pick up time and parent-teacher conferences, Sadie and Shelly were able to gain insight into the child's abilities and lifeworld practices though interactions with family members. Shelly saw this as a place to begin.

> It's always a favorite time when we get to have the conferences with the parents even though I see a lot of my parents every day. Sometimes when they sit down and do the

> conference even more things come out that they don't share on a regular basis. We can have a conversation about what they're actually doing at home, what they're bringing from the classroom to home, or things that the parents do with the kids. It can be surprising where and how they are learning their numbers at home. It's neat to come back the next day or week with some ideas that the children will be interested in. [Small group, 11/2011]

Shelly retains value in parent-teacher conferences and believes them to be a space where families and teachers discuss the child's academic skills, socio-emotional development, school and classroom policies, and other pertinent information.

These established and school-based practices provide a glimpse into the home practices of their students, though both teachers express a desire to know more. In a small group conversation in the PD program, Sadie, Shelly, and Mika (a 4K teacher) discussed their fall parent-teacher conferences where they were encouraged to ask about math at home.

> Shelly: I think delving deeper into knowing who your families are and offering them that opportunity to share is important.
>
> Sadie: Yeah, and asking them for feedback about what they do at home to help their kid learn math skills.
>
> Shelly: When you find out what parents do with their kids, it's really interesting because then you can see the kids through a different lens. You're looking at how they're learning at home.
>
> Mika: Yeah, I get to know my families and talk about what the parents and children's home math experiences are.
>
> Shelly: It was really nice for me to get focused on how did the kids learn math at home because I tend to get wrapped up in talking about lots of things. It gave me that window into what they're doing at home, and then what we can do at school. So that was something new, being more intentional about how you're looking for information. Because we tend to talk to families quite a bit about lots of things, but it doesn't always nail down into what their experiences are at home. We might talk about what vacation they're going on or just little random things but not necessarily digging deeper into math. [Small group, 01/2012]

During this conversation, Sadie addressed a commonly expressed concern from teachers that families are not always comfortable in the school context to be forthcoming with information.

Shelly added that conversations in the space of school tended to not focus on the home practices. By asking about daily home functioning and specifically how they incorporate math, the teachers concluded that they would be able to uncover more information than normal.

Traditionally, family involvement is viewed as family members coming to and participating in school activities. Given historical and cultural influences on the context of school, there may be instances when families are not comfortable and are hesitant to share information. Also, the time allocated per family may be brief, which can result in surface-level conversations. For instance, Shelly said that when the district supported a time for families to meet with teachers before 4K began, "we didn't have much time to really delve into families' ethnic backgrounds, it was mostly discussing things about the child's skills." [Small group, 10/2011] Sadie's experience with conferences at London Bridges was similar. She reflected that families came to this meeting time anticipating they will hear and discuss their child's abilities and "want to know what they need to work on at home." [Small group, 11/2011] These brief encounters with families tend to focus on a child's development and academic skills and leaves limited, if any, time to discuss how and what the child is learning at home and their cultural practices. Furthermore when families choose not to participate in this conventional way at school, they are often labeled as "not caring" or "hard to reach". More often than not ethnic, race, or language minority families are disproportionately represented in school-based involvement activities (Horvat, Weininger, & Lareau, 2003).

Though this 'lack of' or difference in caring perception exists, teachers recognize that family engagement in their children's learning has positive academic outcomes for children (Day, 2013). Both Sadie and Shelly worked in sites that have culturally diverse populations and they

each take action to ensure a strong connection between home and school. Shelly reflected on her concerns with traditional family involvement practices.

> Many times families want do things for the classroom but they don't know how to do it…I find that many families want to be here more than they can. For some families they feel that 'this is school' and 'I don't belong here cause this is a place where my child goes and it's not the way they learned when they were growing up'…So just helping them feel comfortable so they want to engage. [Shelly, Interview, 09/2011]

Shelly actively worked to build relationships with families and create an open space for communication. She said, "When you have that relationship, families feel more comfortable opening up to you about things, because they know you're interested in them. And so it's kind of a back and forth..." [Interview, 05/2013] This reciprocal relationship is key in the FoK framework; the idea of building a mutual respect between the teacher (school) and family (home). A foundational connection must be established in order for teachers to ask open-ended questions about family practices and for the family to feel comfortable to share more traditionally private information.

An aspect of children's FoK that EC teachers tend to learn rather quickly is the family member make-up of the household. Teachers often ask about children's immediate family members or young children are enthusiastic to offer this information during the first weeks of school. This is a great starting place for a conversation with the family during an ethnographic home visit. Shelly shared,

> Sometimes we know that there's cousins or relatives in the school but we don't know how many or how important they are. Sometimes when we think about home visits, we tend to think that nuclear family unit: mother, father, and two siblings. And that really isn't the case a lot of the times anymore. Maybe they're living with grandparents or maybe they're living with relatives but you don't know. So for my focal child that is the case, there's the mother, father, and a younger sibling. But what I don't know is whether there are other relatives there. I know many other children in my class are experiencing being raised by a grandparent. [Small group, 10/2011]

Shelly described what she already knew about the child's family make-up and what she wanted

to know. She used this curiosity to frame her family interview questions. She wanted to express to the family that the social network surrounding the child is important. In addition, Shelly wanted to use the gained information about family members in verbal interactions with her focal child at school, such as asking how so-and-so was or what the child did with his auntie over the weekend.

One particular family relationship challenged Sadie to think further about what the FoK framework meant to her practice. Sadie had a long-standing connection and knowledge of Clara, her first year focal child, and Clara's family. Clara and her siblings had been enrolled at London Bridges Child Care center for multiple years. Sadie had Clara's older sister in her preschool classroom two years ago and had already established a rapport with their mother. In considering Clara's FoK, Sadie naturally drew from what she knows of her sisters' skills, interests, and family experiences.

> I did a lot of comparing because their funds of knowledge were very different. She's at very different levels academically or mathematically, than her sister was. And I guess I went into the home trying to figure out why that was. I know they're two different kids and they're very different, but if they're coming from the same household then they have to have the same funds of knowledge, right?! They do have different dads, but it is just very confusing. It's drastically different. [Small group, 10/2011]

She grappled with how the traditional definition of FoK, the families' culturally and historically accumulated daily practices, applies to multiple siblings in the household. In talking through her sense making of FoK, she included the biological background of the children in recognition that this genetic make up may have an impact on a child's development and cultural knowledge. In an effort to help her colleagues understand her confusion, Sadie added that children's social and cultural contexts also impact their development. She shared that because Clara had spent a significant time at London Bridges since infancy, she saw both home and school contexts as influential in shaping her cultural knowledge and skills. [Small group, 10/2011] Over the course

of the PD program, Sadie continued to revisit this notion of 'what constitutes FoK' and how to conceptualize it given her specific context of child care and her previous interactions with families due to enrollment in the building.

5.2.2 Ethnographic Home Visits

Because Sadie and Shelly already had relationships with their focal children based on classroom interactions, the aim of the ethnographic home visits was twofold: (1) to create stronger relationships with family members and (2) to learn about the families' historical and cultural practices. Traditionally, a central tenet of the FoK framework was to build a mutual trust and reciprocal relationship with families. For Sadie and Shelly, seeing children's social and cultural experiences at home and in the community as rich in knowledge and resources was an avenue to further develop a relationship and connection with families. Through ethnographic home visits, teachers and families work together to build mutual trust or *confianza* (Vèlez-Ibáñez & Greenberg, 1992). This approach to home visits shifted the role of the teacher to being that of a learner.

Sadie and Shelly approached these home visits from a place of openness and enthusiasm. Both believe that home visitation is a valuable practice in ECE and conducted them in previous job settings. Sadie and Shelly drew from their previous professional experiences to conceptualize potential outcomes of conducting home visits using ethnographic methods. Sadie, who prior to the 4KPD program did more traditional-style home visits, perceived the FoK framework as a way to develop relationships with families. Sadie says she "wanted to learn how to connect with my families" [Small group, 05/2012] because she believed that this will "benefit the teacher-student relationship." [Whole group, 10/2011]

In a small group discussion, Shelly shared that this approach reminds her of years ago in the district. When Shelly first came to the Cappitown school district resources were seemingly more plentiful. She had lower class sizes, support staff available to plan lessons with, and less district policy regulations on her time. Because of these factors, Shelly said that she was able to conduct home visits once a month with all of her students. She described her experience on these home visits. "I didn't really bring anything and I just kind of went and talked to the parents and observed the children and got to know them in their home context." [Small group, 09/2011] Following changes in the district and the inability to maintain that type of visitation, Shelly reflected, "I could tell I missed it because I didn't have that connection anymore with some of the new families that entered the program. I loved that we had that opportunity. And now I'm struggling with where I can fit it in." [Small group, 09/2011] She wrote in a reflection of her first ethnographic home visit that, "despite efforts to engage families in the classroom, I frequently find that it is difficult to do so and I struggle with how to meet the child's needs without knowing more about them. [Shelly, HVR] At the end of the program, Shelly said,

> I've found time has been a big factor in making that happen. In between that we've had IEPs, we've had staff meetings and professional development and so our time gets cut short. Yet doing the FoK home visits and things were extremely helpful to get information about the child and I've thought about some children that I really would like to really know more about. [Interview, 05/2012]

The constraint of time and a higher enrollment have reduced her access to home visitation practices; however Shelly continued to make herself available to meet at the school and at children's homes on her personal time in order to build a connection.

Sadie and Shelly were eager to begin the home visits. Though well intentioned, Sadie shared her difficulties when initially contacting families to conduct the ethnographic home visits in the second year of the PD. "Some of my parents are very leery about this. I think they're

reading so much into it. I keep telling them this is just for my class but I keep hearing 'I just don't feel comfortable' from them." [Small group, 10/2012] In the first year of the PD program, the conversation and concern about family perception was similar. In a small group discussion following the introduction of ethnographic practices for home visits, teachers grappled with what this imagined experience would be like.

> Sadie: This isn't like a parent-teacher conference format. It's beyond that. Parents might wonder, 'What's wrong that you had to come talk to me?'
>
> Chela: Or families may be a little more formal and want to sit down at the kitchen table and have a discussion, which I'm curious to see if that has to do with various cultures or socio-economic backgrounds…
>
> Sophie: And it's different too because nobody else in the school are going to children's homes like this.
>
> Sadie: And everybody that ever has a meeting always meets at school. And because they talk to each other, parents of children at that the school might be kinda wondering well 'why do they have to come to my house? There's a first grader over here and their teacher doesn't come over.'
>
> [Small group, 09/2011]

These teachers shared that they desired family participation in this experience rather than feeling pressure to say 'yes' or view this as a requirement from the school. They attempted to lessen the families' concerns by making the event seem less intense or stressful.

Returning to the small group conversation about family uncertainty, Sadie worked through it by sharing that it is about meeting the families half-way and being authentic about the aim of the home visit.

> It is hard because parents might think well what's wrong with my kid? Why does the teacher have to come to my house and do all this? And this is not anything with their child. I am trying to grow as a professional and as a teacher and would appreciate you letting me come in your house and communicate and observe with you for the year.
>
> [Small group, 09/2011]

Sadie positioned the home visitation as a way to support her professionalism. Sadie and her colleagues go on to agree that families may be more open to the idea if the focus was on improving their child's academic development and learning.

Shelly also acknowledged that families might have a different perspective of this situation. She questioned,

> How do we remain respectful of families who just worked eight hours and spent two hours on the city bus collecting their children and getting back home? Do they really want somebody coming to their house at seven and hangout for an hour? Or do they really just want to keep things in a routine that's safe and predictable?
>
> [Small group, 09/2011]

Concern of the family's view of these home visits being a burden [Small group, 02/2012] quickly subsided as teachers continue to learn about FoK and gain access to families' homes. Through course readings and discussions, Sadie and Shelly deepened their knowledge of what it meant to be an ethnographer and relinquish the early apprehension. Teachers began to see that "a home visit can validate teacher interpretations of children's interests, open up discussion of parent knowledge and perspectives, deepen shared understandings, and lead to mutual respect that may enhance children's learning across home and [school] contexts" (Cooper & Hedges, 2014, p. 172).

The concept of FoK set the stage for approaching home visitation with eyes of an observer and learner through ethnographic practices. Sadie and Shelly read articles describing the benefits of these methods. An early reading in the PD program highlighted the advantages of approaching home visits to learn about families' FoK; stating, "these visits can reveal rich social fabrics, fascinating oral histories, ways of organizing complicated lives, and technical expertise that can enrich everyday curriculum" (Ginsberg, 2007, p. 58). Sadie and Shelly drew from this work and other articles [See Appendix A for a list of course readings] that presented other

teachers' experiences in conducting ethnographic home visits as a springboard for in-class discussions.

An important step in learning to be an ethnographer is learning to record descriptive field notes for context and background information. Similar to the foundational FoK study, teachers in the 4KPD included an observation of their focal child's neighborhood. Sadie, Shelly, and their colleagues were given feedback and prompting questions from PD facilitators then met in groups to debrief about their experiences. What began as a way to practice field notes and collect information about their focal child's community, lead to insights on previously held assumptions of children's living contexts. Sadie discussed with Emma, a fellow 4K teacher in a child care center, about her desire to know more about her first focal child Clara's neighborhood.

> Sadie: Clara's family lives right by the technical college so there's lots of action in that neighborhood. I only see the main strip and I'm curious because I know there's a park in their complex that they play in. I kind of want to be the creeper that drives around through the parking lots just to see what's up.
>
> Emma: See what they see in their neighborhood?
>
> Sadie: Yeah to kinda see what they see.
>
> Emma: Even just that little piece gives you a huge piece of what their experience is.
>
> Sadie: We talk about home and family. For some kids it's hard for them to describe their homes because it's hard to explain but it'd be just nice to know what they were talking about. I'd like to take a day to drive around and watch all of my kids but that would be weird. If somebody saw us they'd question what we are doing.
>
> [Small group, 10/2011]

Although Sadie voiced her concern of looking peculiar to onlookers as an "outsider" and adult watching children in a neighborhood, she saw the value of a community observation. This was also true of being inside the home talking with families. Both teachers did not want to come off as voyeuristic. She knew that it is a way to understand children's lives outside of school and see firsthand what their daily experiences are like.

Sadie took this belief and value in understanding the dynamics of the neighborhood and includes it in her first home visits. Sadie wrote:

> I chose to drive around the neighborhood and apartment complex a couple minutes before actually going to Clara's home, even though I drive by the complex every day on my way to work. The state's technical college is directly across the street and the sidewalks were busy with college students going to/coming from classes. Traffic was a little busy, probably from a combination of rush house and students. At the apartment complex, cars were parked in their distinguished spots, a couple of people were walking into their houses after a long day, and no children were playing outside at that time. [Sadie, HVR]

Later Sadie connected what she saw at the apartment complex to what she already knew of Clara's family. During a brainstorming session dedicated to planning math activities for families that are based on their focal child's FoK, Sadie said,

> Clara's mom is very busy. She goes to school and she works. She has told me that she doesn't have time to sit down and do the things that we send home because of her commitments and because in addition to Clara, she has a 2-year-old son and a 6-year-old daughter. So I'm trying to think of more things for her, or for anybody in general, to do on the go. Like ideas for learning in the car. [Small group, 01/2012]

Sadie identified the 'on-the-go' nature of Clara's family and included that in her field notes of the apartment complex. In learning to be an ethnographer, Sadie included her previous knowledge of her focal child's family into her notes by saying 'after a long day'. This framed her perspective of others that live in this neighborhood and apartment complex. She also uses what she saw during her home visit to inform her activity planning. Sadie understood that the family spends a significant amount of time in the car and designed home learning experiences that would translate into the lifestyle and cultural practices of this particular family.

Comparably, Shelly also grappled over assumptions of family living contexts when planning family math activities. She shared a personal concern when sending things home is making sure they have access to materials to conduct a particular activity. "You couldn't necessarily create this game as a generic thing for all families if you didn't really know that they

have household items to do it. Does the child have things to count? Does he count stairs?" [Small group, 01/2012] This reference to counting stairs specifically connected to her first year focal child, Nick's, housing situation. "Nick and his family live about six bocks form school, in a residential neighborhood. They live on a fairly quiet street with a combination of single-family homes and two story duplexes. Nick's family lives in one of the duplexes." [Shelly, HVR] Majority of Shelly's students lived in the neighborhood surrounding Grayson Elementary, so there was an assumption that most of these homes have staircases in them and could be used as a counting tool for a home math activity.

In learning ethnographic methods, Sadie and Shelly not only learned the process of taking field notes but also how the methods inform their thinking. Through feedback from PD facilitators and colleagues, they were able to think through the thoroughness of their notes and how to deepen the descriptions of what they observed. It also provided an opportunity for reflection of their assumptions of context and their personal biases and values. During group conversations, Sadie and Shelly considered the importance of being an ethnographer to enhance their understanding of their students' FoK.

Ethnographic methods were also used to understand what it meant to conduct a family interview in the home. Shelly used what she knew from previous practices to formulate a plan for entering homes. "When I did home visits I started with just asking them to talk to me about the things that their child likes because that kind of was a springboard into a lot of different things." [Small group, 10/2011] Open-ended questions were unanimously considered more fruitful for ethnographic home visits than ones that solicited one-word answers. [See Appendix B for examples of family interview questions] Sadie contributed specific questions to ask families, such as "Tell me about how you came here. Why did you choose this home to live in? Why not

a different state? What specifically are you concerned or worried about?" [Small group, 10/2011] During the group co-construction of potential questions to ask during the 4KPD, Sadie and her colleagues discussed how some might position families on the defense. Sadie shared that the families she serves in the Oakcrest neighborhood may need the phrasing tailored differently to delicately approach sensitive topics, such as hygiene, access to food and tangible resources. [Small group, 10/2012] This is because many of the families Sadie worked with live under financial and living constraints that were not always made public. Due to the personal and sensitive nature of these questions, Sadie reiterated that it is imperative to have a relationship with the family so you know how far you can prompt or suggest.

Above all, deeper questions could not be asked until mutual trust or *confianza* was established with families. Shelly states:

> Families have brought [personal] things up to me just in passing that I thought 'oh, that would be something I should know'. But parents don't think about it because it's really not in the scheme of their child's immediate schooling. So until you have that relationship you can't ask for that information." [Small group, 10/2011]

Even at the onset of an existing relationship with families, Shelly warned teachers to consider the families' perspective of what information is worthy of being shared.

> Shelly: As a parent, I certainly don't offer that information to my children's teachers because I don't think about it.
>
> Betty (veteran 4K teacher): Or you don't really think it's that important but now from a teaching perspective, as an ethnographer everything's important. But parents don't think that way.
>
> Shelly: But you think differently as a parent. It's not that you're trying to hide anything, it's just that it's so part of your daily life that you think that somebody should already know that or it's not pertinent. [Small group, 10/2011]

It was important to both Sadie and Shelly to maintain this level of sensitivity when asking the families questions about their labor and living histories.

After solidifying access to their focal children's homes, Sadie and Shelly approached the home visits as an ethnographer by keeping the predetermined questions in mind yet also incorporating a sense of spontaneity to the conversations. This mixed approach eased possible tension or jitters for the teacher and families while welcoming unanticipated information about the families' cultural and daily practices.

Ethnographic home visits were an opportunity for teachers to see children differently. Teachers knew the child from the context of school and as a "student". Entering the home as a learner altered the teachers' perspective to seeing the child as a multi-dimensional being (Moll, et al., 1992). Sadie shared an example of her focal child, Clara's, math development and how the ethnographic home visits would be an opportunity to see how she learns at home.

> We are working on counting at school a lot. Whenever I sit and play games she is always right there and she'll ask 'what number is that?' and she will repeat whatever I say. She must do something like that at home, where she feels the need to repeat. I want to know what specific things they work on at home. Do they work on repeating a lot? Just through every day life or do they sort more? Do they do some counting at home or some number games? I want to know the sorts of things mom would like her to work on and what things I can do to help mom. I want to know what types of games she prefers over others at home. [Small group, 01/2012]

In their experiences of using ethnographic methods, Sadie and Shelly encountered instances in which they admitted seeing their focal child differently given home cultural practices. Shelly's first focal child, Nick rarely participated during circle time which led Shelly to think that he was not interested or lacked the language skills to do so. Following her first ethnographic home visit to Nick's house, Shelly observed the different way that Nick learns at home. Following a warm welcome from Nick's family, the conversation moved swiftly from greetings and pleasantries to an academic and skill focus. Interestingly, Nick's dad shared the cultural learning difference between his own childhood in Tibet and American schooling.

> The conversation turned to how Nick had been beginning to write his name using the iPad. Nick's dad told me he was interested in how Nick is developing this skill, because when he was a boy in Tibet, they learned to write very differently. He said, "Here in America, you let the children write however you want and you accept however they do it. I don't see practice here. In Tibet, we made our own writing tools from sticks, and we sharpened them and then made our own ink from rice. Then we got a piece of wood, and we practiced. But we didn't practice A-B-C-D like you do. We practiced parts of letters. We started with lines. Then when we could make straight lines, we moved to maybe writing the top apart of the A, like the triangle part. Then we mastered that, and then we were allowed to practice the second part of the letter. It took about 6 months to learn the alphabet, but we learned it." [Shelly, HVR]

Shelly digested this information and reflected that she was grateful to have moments like this in the homes with families. Through ethnographic home visits, teachers were exposed to various ways that families are involved in their child's education. There was potential for a shift in the teachers' attitudes and beliefs of children and their families and in disrupting the deficit model discourse (Oughton, 2010). Being open to how children learn at home also extended Shelly's understanding and personal values of cultural materials. She told her peers:

> I don't think we realize that the extreme amount of opportunities technology offers. We think of screen time and eye strain effects on development, but this was a family engagement thing. The whole family was involved. Because there are not a lot of children in his neighborhood, his family spent time using the iPad as a way to learn skills. [Small group, 02/2012]

Sadie's visit to her second focal child, Kyle's house, was different in that she was already privy to most of the cultural practices she observed, such as his passion for video games. "He loves video games. He has a regular DVD shelf full of Wii games." [Small group, 11/2012] In addition to the Wii games,

> They do a lot on their I-Pad with educational games. His parents talked about how much they value education and encourage Kyle to work on things when his sister is doing her homework so he isn't a huge distraction to her. Mom asked me if I knew about any games on the Wii he could play that have more of an educational emphasis to them since he loves to play it every opportunity he gets. [Sadie, HVR]

Even though Sadie knew of Kyle's academic abilities and varied interests, the home visit provided a way for her to connect what Kyle shared or demonstrated in the classroom to what he and his family do at home. On the home visit, "he showed me all of his toys, which were a lot of angry birds, Mario, and other stuffed animals, and cars with a car track carpet." [Sadie, HVR] Not only did Kyle enjoy playing video games at home, he also had popular culture toys, which exemplified the prevalence of popular culture's influence on this young child (Kincheloe, 2004).

Sadie and Shelly both transformed from outsiders into participants during the home visits. Both Nick and Donte demonstrated shyness when Shelly first came to their house though quickly warmed up to the idea of her presence. She admitted to peers in the PD that through the home visit she observed the iPad as more than just a game; it was a way for him to do number recognition and solve addition and subtraction problems. By the end of her visit to Nick's home, his dad encouraged her, just as he does Nick, to practice using the iPad for math games.

> I kind of hesitant because it's not that I didn't know the answer, I just didn't know how to use the iPad. So Nick showed me how to draw a picture with his finger and it straightened the lines out, which was interesting because he has developed this straight mode of writing since the beginning of the year. I'm not sure if this has anything to do with it but it has to help. [Small group, 02/2012]

In this scenario, Nick and his father had the role of the expert with the iPad and game and showed Shelly how to use the tool to complete the task. Families are the experts of the knowledge and skills within their homes. Teachers, as outsiders to the sociocultural practices, enter as peripheral learners (Lave & Wenger, 1991). This ethnographic home visit then became a moment of context and group-dependent, mutual engagement and participation. No matter the level of co-participation in this learning experience, everyone involved has potential to transform others and build interconnections across cultures for richer understanding (Lave & Wenger, 1991). Shelly, without losing her identity as the teacher, connected this instance to what she has

observed Nick doing in the classroom. She continued to reflect that she needs to learn how to use an iPad more efficiently so she can incorporate it into the classroom because she recognized the academic influence is can have on learning for young children.

This notion of drawing on a child's knowledge, cultural resources, interest, and expertise to inform the design of academic learning tasks is at the heart of the FoK framework. Sadie and Shelly continuously considered their focal children's (and other children's) FoK when lesson planning and selecting materials for the classroom. In the following section, I present both planned and spontaneous examples of how Sadie and Shelly draw from children's FoK in the classroom.

5.3 Enacting Funds of Knowledge

In this section, I explore what factors Sadie and Shelly employ to enact FoK. I examine their pedagogical decisions and how they infuse the FoK framework into pre-determined curriculum. I begin by describing the context of each site and how prior to this study, Sadie and Shelly include children's cultural knowledge into the classroom. Next, I focus on how the teachers intentionally planned learning activities based on children's FoK and how they helped their students transmit cultural knowledge and resources between their lifeworlds and school. I then investigate how teachers and children construct a social learning context that allows the mediation of FoK.

Four factors contributed to Sadie and Shelly enacting FoK:

1. A socio-cultural classroom context
2. Pedagogical content knowledge
3. Established relationships with children and families
4. Knowledge of children's interests

5.3.1 Curricular Decisions: Fostering FoK in the Classroom

One of the main tenets of the initial FoK framework was to design curriculum based on students' historical and cultural knowledge. As teachers understand and respect children's FoK as a form of professional knowledge (Andrews, Yee, Greenhough, Hughes, & Winter, 2005), it informs pedagogy and curriculum for diverse communities, thereby, as Moll et al. (1992) believed, improving children's educational experiences and outcomes.

In line with the concerns voiced by Norma González (2005), how does a teacher use FoK to inform curriculum when institutional constraints exist? Sadie and Shelly were under different curricular pressures from the district and their site placements. For Sadie, working for a corporate child care center meant a pre-determined curriculum. The lessons were play-based and clustered in two-week themed units that included selected vocabulary, materials to add to the classroom, as well as required and structured whole and small group activities. Each learning area of the classroom (e.g. block, sand/water table, dramatic play) reflected the theme. Sadie wrote that her pedagogical and environment decisions are framed by the London Bridges expectations. "The curriculum contains the themes we are required to teach. This encompasses all of the state early learning standards, which is very comparable to the Creative Curriculum approach." [Sadie, AR] Required to adhere to the corporate curriculum Sadie viewed the structure as limiting space to include children's interests, resources, and cultural experiences.

At Grayson Elementary, Shelly used the Creative Curriculum, which focused on a play-based and developmentally appropriate approach to learning for young children. The curricular approach provided a variety of instructional strategies and guides for teachers to connect academic content through classroom environment and material decisions. Shelly viewed this approach as a way to "focus on the children's experiences to further their understanding of new

skills. The Creative Curriculum affords a natural bridge to the concept of each child bringing their particular experiences, or funds of knowledge, to the classroom environment, which the children then draw upon to shape their learning." [Shelly, AR]

Differences exist in the teachers' sites and curriculum; however, there were many similarities between the two teachers. Both teachers implemented pre-determined and structured thematic units last, on average, two weeks. Both teachers modified the units and selected materials that reflected their students' interests. In addition to their knowledge of the child's skills and abilities at school, Sadie and Shelly drew from ethnographic home visit observations to design learning tasks.

This was not always smooth and easy for Sadie and Shelly. Working within the constraints of mandated curriculum, there were moments of struggle to ensure that both their students' FoK was honored as well as the objective of the learning experience was met. For the most part, the process to design learning opportunities that address content learning and children's FoK was accomplished through the assistance of peers and facilitators in the 4KPD. Other times, it was more spontaneous when a child mediated his or her own FoK naturally into learning tasks and play.

5.3.2 Typical Classroom Experience

As I attempted to organize this section, the complexity of the classrooms and thematic curriculum units made it difficult to parse out the intricacies of environment and material choices. Because of this, I found it useful to first distinguish between what a typical two-week curriculum unit looks like in each classroom. This provides a foundation to see how Sadie and Shelly enact FoK into their curricular decisions, both in planning and spontaneous moments when children volunteer their cultural resources and knowledge.

The following examples represent typical curriculum design, setup, and facilitation for Sadie and Shelly's classrooms. Both demonstrate how the thematic unit is incorporated into various aspects of the day and how learning transfers continuously between whole and small group discussions and play.

5.3.2.1 Sadie's Classroom

Each new two-week unit in Sadie's curriculum required a classroom environment change. Aside from furniture and material changes, Sadie also incorporated the theme into images on the walls, meal conversations, and encouraged children to bring show-and-tell items that connect with the theme.

> *On this sunny Wednesday morning, I enter Sadie's classroom and my attention is immediately drawn to the dramatic play area. A four person tent and a tissue paper fire with four chairs facing one another have replaced the usual furniture (child-sized couch and table). There are pictures on the wall of people camping and a bucket of pretend marshmallows on the windowsill. [Field notes, 05/15/2013]*

Figure 1

Figure 2

For this particular unit, camping, Sadie whispered to me that she did not think a lot of her students go camping but they know what it meant. Sadie's role was to help children connect with this theme and extend their understanding.

> *Sadie enters the dramatic play area. She sits down by the campfire. She and Corrina talk about camping. Sadie starts to talk about tubing on a river.*

Sadie: Sometimes if the water isn't high enough then you get stuck on the rocks. Then someone who is not like me that has long legs, has to help pull you off the rocks. Sometimes we get out and swim and other times we just float.
Corrina gives Sadie a bowl.
Sadie: This camp soup is delicious. Thank you.
Sadie pretends to eat the soup. She takes a pretend marshmallow stick and puts it in the campfire.
Sadie: I really like to get my marshmallow on fire and then smoosh it in between two graham crackers. Shamya hands her two graham crackers from the bin on the windowsill.
Omar comes in the dramatic play area. He is cooking on the stove. He puts pretend food in a pot (peas). He pretends to dump liquids (empty syrup bottle and plastic red bottle) in and stirs the mixture. He takes the pot over to Sadie and tells her that he made her soup. Sadie asks what is in it.
Omar: There are peas. And other stuff. And bacon!
Sadie: Oh, so it's like potato bacon soup?
Omar: Yeah! And a really good ingredient.
Sadie: What is that?
Omar: Read it.
Omar walks over to Sadie and shows her the almond extract bottle.
Sadie: Pure almond extract. That is a good ingredient. [Field notes, 05/15/2013]

Note that Sadie entered the dramatic play area and offers information from her personal experience camping. Though the children did not respond directly to her statement, they continue to play within the theme. They followed Sadie's lead to make smores by the campfire and Shamya actively listened to Sadie's comment about two graham crackers. When Omar entered the play, he picked up on Corrina's interaction with Sadie and used imaginative play to create a pot of soup.

Following this play scenario, during a whole group conversation about animal habitats, Omar made a connection between the thematic unit and the topic of conversation though it falls flat.

Sadie: Yes! A habitat is a home. We are going to talk about 3 different habitats. I am going to write jungle and a jungle tree. We have a forest.
Chris: Are forests scary?
Sadie: No. The forest is like the woods.
Omar: I went to the woods. I went camping in the woods.

> *Sadie: And the last one is the ocean. We need to figure out what animals' habitat that is. Who knows an animal? [Field notes, 05/15/2013]*

In this interaction, Sadie remained focused on the objective of the lesson, which is on the three types of animal habitats. The corporate curriculum included sequential whole group discussion topics that built on each other over the span of the unit. Sadie was required to accomplish the learning objective each day to stay on track with the curriculum. At times, Sadie would take up a child's connection to a topic yet she limited these interjections in order to maintain control and focus of the lesson. For example, weekly on Fridays the children in Sadie's classroom could bring in one item for show-and-tell. Sadie limited this time to a few questions, mainly from her to the student, about what it is, where is came from, and how it connects. When the children were really intrigued by an item, such as Mike's Spiderman toy, they would also ask questions which connected their FoK with one another. [Reflection Journal]

Show-and-tell for Sadie's students was a powerful time in the classroom. This traditional EC practice is an opportunity for children to bring something from their lifeworld that connected to what they are learning.

> Sadie: Every Friday I do Show-and-Tell but they can't just bring in the same thing every week.
>
> Marley: It's a take-home connection
>
> Sadie: Unless you have the amazing all encompassing toy. Because I encourage them to go find something at their house that has to do with the letter of the week and turn it into a show-and-tell academic time, instead of, 'oh it's my favorite thing'.
>
> Janet: Yeah. Ok. So you got to get parents on board with that.
> [Small Group, 10/2011]

It was also a time for Sadie to connect her personal FoK with the children to further build relationships and understanding of their cultural practices outside of school. She shared, "some kids don't bring show-and-tell ever. I bring my own show-and-tell once every 4 or 5 weeks so

that I can be like ‘oh I forgot mine today too. That’s okay. I’m just going to watch others.” [Small group, 10/2011] On back-to-back weeks, Kyle (Sadie’s second year focal child) brought in cultural artifacts that reflected his interest FoK and the classroom curriculum (week one letter of the week is ‘L’, and week two it is ‘T’).

> *Sadie: Kyle come on up.*
> *Kyle stands next to Sadie holding a plush toy from the Nintendo game Super Mario Brothers.*
> *Kyle: I brought Luigi from Mario Kart. His name starts with an “L”. He is from the game Mario Kart for Wii. When I was a baby I wore these clothes. (The character wears overalls.)*
> [Field Notes, 04/05/2013]

> *Kyle comes up next to Sadie. He has a plush toy turtle from Super Mario Brothers.*
> *Kyle: I brought a turtle.*
> *Sadie: And what does turtle begin with?*
> *Kyle: A t.*
> *Sadie: Tell us about your turtle.*
> *Kyle: I play with him.*
> *Sadie: Does he have a name?*
> *Kyle: No.*
> *Sadie: Isn’t he Kuppa Troopa from Mario?*
> *Kyle: Well sorta. He sits on his shell. He does this.*
> *Kyle puts him on the shelf and spins him.*
> *Sadie: So what do you do with him at home?*
> *Kyle: We play a staring contest. He wins every time.*
> *Sadie laughs.*
> *Kyle: He can’t blink. Look at his face.*
> *Sadie: Yes, he has a very large nose.*
> *Kyle: And eyes. And he eats turtle food and he has a big fat stomach.*
> *The children laugh.*
> [Field Notes, 04/12/2013]

Sadie demonstrated her knowledge of the Super Mario Brothers game by extending the conversation with the plush turtles’ name which also happens to start with the letter ‘T’. Beyond the curricular content connection, Kyle explains his knowledge of the turtles’ role in the video game, which is to go into its shell and spin. Sadie allowed Kyle to be silly and entertaining when he showed his item to the class, honoring it as an academic *and* cultural artifact..

Kyle's cultural artifact carried with it multiple layers of meaning. It has the academic or intellectual connection of representing phonemic awareness (beginning letter sound). Kyle was able to distribute his thinking across contexts to locate an item at home that supported the academic learning of school. It also represents his interest FoK and popular culture. The artifact also reflected his desire to participate in the classroom cultural practice of show and tell.

5.3.2.2 Shelly's Classroom

After a week off for spring break, Shelly's classroom had some new materials in the different play areas to support the fairy tale and nursery rhyme unit theme.

> *In the block area, there are large red brick cardboard boxes, the sand and water table has straw and small plastic animals, there is a long horizontal strip of red paper with child-made paper humpty dumpty's taped on the top edge, and the literacy table has a plastic bin of wooden dress up dolls. Most of the classroom retained the same resources from previous weeks, such as the marble ramps in the block area, the science table has the 'Am I born from an egg?" animal sorting activity, and geoboards and rubber bands in the math area.* [Field Notes, 04/04/2013]

Figure 3

Figure 4

After the children cleaned up breakfast and their transition activities, they sat on the carpet facing Shelly who sat on an adult chair next to an easel. This whole group time of the day rotated as either a literacy or math lesson. Shelly selected a literacy activity for that Thursday morning.

Shelly: Boys and girls I want you to use your memory today. I need my friends to remember what story we heard?
Evie: 3 Billy goats gruff.
Shelly: What else has 3 in it?
Wayne: 3 little pigs.
Xavier: What about 3 little dogs?
Shelly: Have we read a story about 3 little dogs?
Children: No!
Shelly: Maybe we could write a story about 3 little dogs.
Shelly reaches behind the teacher easel. She pulls out a clear plastic bin. She opens the lid and there are Ziploc bags inside the bin. The children call out, "Legos!" Shelly takes three stuffed pigs out and one stuffed gray wolf.
Shelly: In my box I have a story. I do not have a book.
Emily: Pigs!
Children: THE 3 LITTLE PIGS!
[Field Notes, 04/04/2013]

Shelly sat cross-legged in the middle of the carpet and the children move closer to her. She laid the small stuffed three pigs and the grey wolf on carpet. Shelly told the story of the three little pigs using the props to tell the story rather than a picture book.

Shelly asks the children what they know about the story of the Three Little Pigs. She calls on children with their hands raised.
Wayne: There is a big bad wolf. And he wants to eat the piggies.
Shelly: Do you think he will eat the piggies?
Evie: That he is going to eat them.
Camron: They build houses and the big bad wolf blew them down. And the second house and he blew it down. And the last one he couldn't.
Ally: The first house is kinda like grass and the last one is out of bricks.
Donte: That one is going to be grass and that one is going to be sticks and that one is wooden I mean brick and the bricks and what's that thing again?
Shelly: A chimney.
Wayne: And he is going to climb down.
Donte: And his tail is going to get burned. With steam water that's hot.
Edward: The 3 little pigs will make all the big houses and they will blow and blow well the 3 little pigs make the 3 houses and the first one made it with sticks and the wolf knocked it down. And the second one will build it with grass. And it will blow it down and the last one with the huge bricks won't knocked down.
Xavier: I think that he is going to knock all of them down.
Shelly: I have a lot of interesting ideas here friends. And I am going to write this question down. Will the wolf eat the pig? I should say pigs.
[Field Notes, 04/04/2103]

Shelly welcomed children's previous knowledge of this classic fairy tale. This lesson continued with Shelly creating a t-chart to make tally marks of children's predictions of the end of the story. Shelly wrote the numeral under the tally marks that one child votes that the wolf will eat the pigs and thirteen votes for no. Shelly told the story in a traditional way with 'huff and puff', 'little pig, little pig let me in', calls the pigs 'brothers', calls the homes 'a fine house', and "not by the hair on my chinny chin chin". Shelly encouraged the children to say the story along with her. Most of the children were familiar with the story and participate.

Seventeen minutes later, Shelly finished the story and explained that these materials and the Three Billy Goats gruff bin of story materials would be available for them to play with during free choice time. She limited the activity to the table or laminated floor and not the carpet since the straw was messy and easily broken.

> *Xavier is at the table closest to the block area. He is playing the Three Little Pigs story props with Wayne.*
> *Xavier: Look at the wolves' house.*
> *Shelly: I see that. There is a stick on him. Will that protect him?*
> *Xavier: Yes.*
> *Shelly: Why? Is someone trying to eat the wolf?*
> *Xavier: No. Cause he's the biggest.*
> *Shelly: What about the big blue whale? What do you think Wayne?*
> *Xavier (calls to Marnie who is by the windows): Marnie! [No response] Marnie! [No response] Marnie!*
> *Marnie turns around and walks toward the table.*
> *Marnie: Oh the wolf is in the house? Oh interesting.*
> *Xavier goes back to putting sticks on the wolf.*
> *Evie goes over to the table with the 3 little pigs. She picks up the grey wolf and calls it a 'kitty cat'. Evie had called it a kitty cat during the whole group lesson and Shelly had redirected her then because her calling it a kitty cat was loud and distracting.*
> *(Background information: Evie had a new kitten at home.)*
>
> [Field Notes, 04/04/2013]

Note that Xavier and Evie extended what was just experienced in the whole group lesson and made the story their own. Xavier retained the animal names and housing concept from the traditional story yet changed the roles of the pigs and the wolf. Shelly allowed this interpretation

and attempted to connect Xavier's statement of the wolf's size to a picture book The Big Blue Whale that Wayne was very interested in before spring break.

5.3.2.3 Same thematic unit, different classrooms

Although Sadie and Shelly did not have identical curriculum, there were themes and activities that both teachers included in their classrooms. For example, the 'spring' unit happened in Sadie's class at the end of April and Shelly's class studied it the first week of May. Both classrooms were transformed to incorporate dirt, plants, seeds, insects, butterflies, and worms. Independent of each other, both classrooms made 'dirt cake'[12] for a cooking activity. Sadie and Shelly had similar objectives of the children: participate in following the procedure of the recipe, work together to make something, and incorporate the unit theme into conversation. What was unique to each teacher was the process in which they facilitated the activity and how they built off of children's prior knowledge.

For three days in a row, the daily note on Sadie's easel read that the class was going to make 'shake-it-up-pudding' or dirt cake. Because a requirement of the corporate curriculum was to have daily small group learning tasks offered during the free play time, Sadie chose to offer the cooking activity at this time. Sadie had all materials ready for the children and they eagerly come over to the table in groups of four to make the shake it up pudding. During the activity, Sadie focused on the recipe and asks children questions as they make the pudding.

> *At the blue table, Sadie gives each child a small Ziploc bag. She pours milk into the bags that already have a little dry pudding in them.*
> *Sadie: Who knows what this is?*
> *TJ: Pudding mix.*
> *Sadie: What else do we need to put in there?*
> *Omar: Oil?*

[12] Dirt cake is a general name for a recipe that uses sandwich cookies, such as Oreos, and pudding to make a dessert that looks like dirt. It is common to decorate the top of this cake with gummy worms or pretend gardening items.

TJ: Milk
Sadie: What do you think is going to happen when you shake your bag? I will close the bag and I want you to hold it like this. Shake it up really good. Get all the clumps out.
Jenna: It's kinda like chocolate cake or chocolate milk.
Sadie: It sure does.
Chris: My arms are getting sore.
Sadie: Yes. It's hard work to make pudding.
The children mix pudding and milk together.
Omar: Is it just like Cake boss?
Sadie: It is!
Both smile largely at one another.
Omar: Cause I love Cake Boss!
Sadie: It is from the show. I actually got the idea for this from that show. We must have seen the same episode.
Chris: Did you say Cake Boss?
Omar: I watch a lot of videos.
Sadie cuts the corner of their bag and the children squeeze the pudding into the small plastic cup. Sadie passes a large Ziploc bag of Oreos for the children to crush and pass to the next child. Sadie shows them how to punch the bag of Oreos on the table. The children bang and then pass the Ziploc bag.
Sadie: Now I am going to pass the bowl around and you will put one scoop on top of your pudding and then you put in the worms.
TJ: With our hands?
Sadie: No. With the spoon. Just put it on top. Put a worm in the dirt.
Sadie gives children a gummy worm for their dirt pudding.

[Field Notes, 04/25/2013]

While the children shook the pudding powder and milk, Omar drew a lifeworld connection of the TV show Cake Boss to this school cooking activity. Interestingly enough, Sadie had printed off not only the recipe from the TV show's website. Also from this website, she got the idea to have children make it in Ziploc bags to reduce mess and allowed them to individually make their own dirt cake. She and Omar bonded over their mutual interest in the TV program. When Chris overheard their verbal exchange he also offers his familiarity of the show. By honoring their home cultural practices of watching a variety of TV shows, she allowed the curricular activity to reflect more than just the thematic objective. Sadie also modeled her preparation actions with language and demonstrated the benefits of using technology.

During the first whole group carpet time of the day, Shelly brought the fishbowl from the science table over to the carpet. It was filled with dirt and had a worm in it. She showed the children that the worm surprised her and made a tunnel over night and they discussed why she put grass on top of the dirt for the worm to eat.

Shelly: Do you know what else I have a surprise for you today. We are going to make dirt we can eat. How could we make dirt?
Emily: Oreos
Shelly; What else?
Ally: Pudding!
Donte: How do we make pudding?
Shelly: We are going to. Some people made pudding with us weeks ago. Here is a new fact about worms. Do you think worms like to get moved?
Children: No!
Shelly: Why did I put black paper around the fish tank?
Donte: So he thinks he's underground.
Shelly: So we can't eat dirt. What do you think we will put in our dirt like our fish bowl?
Donte: A real worm.
Shelly: We can't eat a real worm. Why can't we eat worms?
Children call out answers: Cause it's stinky. It's slimy.
Donte: I saw a movie called How to eat fried worms. A kid. He ate. He cooked a worm.
Shelly: Did he like it?
Donte: Uh uh. (No)
Shelly: Donte saw a movie…
Donte: But he swallowed it. He had a burrito one.
Allison: My babysitter has a butterfly at her house and we caught it and it escaped.
Shelly: Was it in a jar?
Allison nods.
Shelly: Butterflies don't like living in jars. Where do they like
Camron: Worms turn into butterflies.
Shelly: No, caterpillars turn into butterflies. Worms stay worms.
Matt: Can we make crushed up Oreo cookies in there?
Shelly: Yes we can.
Ally: This sounds so yummy Ms. Shelly.
Edward: When I saw a bear…
Shelly: Are you talking about Luigi?
Edward: No. It was a video about when he hit it…
Shelly: Well we are not going to talk about video games anymore.
Edward: It was a movie.
Matt: Dirt cake is for my dad's birthday.
Shelly: We are not going to talk about that stuff anymore. We are going to talk about school stuff. The first important thing we have to do today is make some dirt cake to eat.
[Field notes, 05/09/2013]

Shelly strove to connect the cooking activity to the learning objectives of the spring unit and the concept of worms. She supported children's ideas about worms and their lifeworld connections to the task. She recognized when the conversation turns further away from making dirt cake or worms and drew the children's focus back to the activity. What resulted was a loose connection between the thematic unit and the cooking activity. The activity was rich with academic content and focused concentrate more on mathematics than the theme.

To make the dirt cake, Shelly had all supplies ready and calls half of the class over to cook during free play time. They stood around a rectangular table and began by making the pudding. Throughout this cooking activity, Shelly focused on math concepts rather than the 'spring', 'dirt', or 'worm' theme.

Shelly: How old are you? How many stirs will you get?
Laysha: 5.
Danny: I was the first one to turn 5.
Shelly: No, you know who was the first one to turn 5 was? Kari.
Wayne: You know what? Everyone at this table is 5.
The bowl is passed around the table and when Shelly gets the bowl, she says that she gets 39 stirs. The children count as she stirs. Shelly passes the bowl and tells the children that they will take turns one more time. Emily stirs the pudding mix and count aloud as she stirs.
Emily: 1, 2, 3, 4, 5, 6, 7.
Shelly: Hey! Wait a second. You aren't 6 or 7 yet.
Emily and Shelly laugh. Emily passes the bowl to the next child.
The children continue to stir and pass the pudding bowl. Shelly holds up a plastic Tupperware of crushed Oreos. She tells the children that they only need half of the container for their recipe.
Shelly: What can I do to figure out half? This container has an easy way to use. Do you see the line on here? That is called half. Right now it is full and we need to makes half. But first we have to add some cool whip. Does anyone know what whipped means?
Emily: Spanking?
Shelly: No, whip when you are cooking the word whip means something different. It is when something is being stirred very quickly.
Shelly explains that whipping cream is sometimes made from just one ingredient. The children ask her if they are going to make cool whip and she tells them that it is already pre-made though you can make it if you want to.

Shelly: We have to get half of this [the cool whip]. This has 16 ounces. We have to get half. What is half of 16?
[Silence]
Wayne: 6?
Shelly: That's close.
Wayne: 7?
Shelly: That's closer.
Wayne: 8?
Shelly: Yes! 8 ounces. I have a measuring cup here and we will fill it up to 8 ounces.
[Field Notes, 05/09/2013]

In this discussion, Emily offered a cultural connection to the vocabulary term 'whipped'. Rather than tell Emily that her definition of the word is incorrect or inappropriate, Shelly explained what the word means when cooking. As the activity continued with the other half of the class, Shelly focused on counting how many plastic cups they need and how many worms they needed to put two in each cup.

5.3.3 Intentional Transmission of FoK

After ethnographic home visits, Sadie and Shelly had a wider lens of the child. In between return visits to their focal children's homes, teachers were able to observe and interact in instances in the classroom that reflect their FoK. Drawing on what they now know of the families' history, cultural resources, and the children's interests, Sadie and Shelly made meaning of the learning that occurs at school and how it connects to home practices. This was not to say that Sadie and Shelly did not already possess this intuitive nature to draw on children's lifeworlds outside of school. As previously presented, prior to learning ethnographic methods, Sadie and Shelly demonstrated value in knowing their children and used a variety of means to connect with families.

Sadie and Shelly's first experience consciously designing learning experiences based on their focal child's FoK came in the first year of the 4KPD program. Through reflective work and in-class discussions, teachers created activities for a district-wide 'Family Math Night' [FMN].

Returning to Shelly's comment earlier that she "was basing it on what I have seen in the classroom and the information that I had" [Small group, 10/2011], these FMN incorporated knowledge of the child from both school and lifeworld contexts.

It is important to note here that these activities were planned specifically for a math night when families came to the school after hours. Families went from room to room and engaged in different learning games that could be taken and replicated at home. In the 4KPD program, Sadie and Shelly were encouraged to incorporate their focal child's FoK in these activities while aiming to reach the general population of their class. For this reason, the following activity plan examples weigh heavily on math abilities and skills and were framed on focal child FoK.

Based on the combination of ethnographic home visits with Clara's family, her demonstrated interests in the classroom, and math skills, Sadie designed an activity called 'number necklaces'. (See Appendix C for the activity plan). What is key to focus on in this activity plan is Sadie's reasoning for choosing this activity. Her justification mainly centered on improving Clara's math skills and abilities. Sadie was concerned about her math skills from the beginning of the school year. Sadie felt confident on Clara's social and self-regulation skills. Sadie used Clara's FoK, her interest in female-gendered items and activities, as a tool to increase her academic content knowledge.

From a combination of this ethnographic home visit and her previous knowledge of Nick's academic abilities, Shelly created a math game that could be differentiated and used in multiple ways. (See Appendix D for the activity plan). Shelly described her reasoning for designing an interactive math dice game as reflecting Nick's deep interest in using the iPad at home for interactive math learning. Shelly recognized that Nick learns better when moving and manipulating items so she creates a game that has both of these elements.

Sadie and Shelly used different approaches for this first assignment of using children's FoK. Both used interest FoK to design activities and created activities that could be used by other children and families. Intriguingly neither teacher used the child as expert in the presentation of the activity, which unintentionally, turned it into a perfunctory learning task and out of context (Civil, 2009). Though this was the case, children still took up the lesson and the teachers reported that they enjoyed the activities and were engaged.

5.3.3.1 Action Research Projects

Teachers gained insight into educational practices in various ways. One particularly important contribution to pedagogy and classroom practices was through research in one's own classroom (Cochran-Smith & Lytle, 2009). By studying the embedded phenomena in practice, teachers had the opportunity to critically reflect and take action based on their research findings. Positioning the teacher at the center of the research process, action research provided an insider perspective on the intricacies of daily classroom functions and learning (McNaughton & Hughes, 2008).

Sadie and Shelly conducted action research for the culminating activity for the 4KPD program. To honor the collaborative nature of action research, teachers met to learn the process of action research in early childhood (Castle, 2012) and individually identified a problem centered on developmentally and culturally responsive mathematics in their classroom. The process of enacting FoK through action research included identifying a child's cultural resources and lifeworld practices, collaborative brainstorming of ways to use FoK to address their research question, designing a plan to collect and analyze data, and constructing a written representation of their work.

At the time of the 4KPD, Sadie and Shelly experienced difficulties with student engagement during transition times, such as before and after meals and in between activities. Both teachers relied on traditional transitional practices, such as "reading" book, until everyone in the class was ready for the next activity. For many of their students who were non-readers, they used this time to look the book's illustrations. After the novelty of this activity wore off over time and behavior problems began, Sadie and Shelly recognized that they needed to make modifications.

> Shelly: I've noticed for a while is that kids come in, we have breakfast right away but they're finishing in staggered rates. Like one kid's done right away, one kid's still eating, so there's a time where they go at a little area of the carpet where they can read a book or do a puzzle, or there are some manipulatives there. But there really wasn't any organization to it, and it had kind of always been in the back of my mind that I wanted to make it more focused in some learning way. [Whole group, 05/2013]

> Sadie: I picked transition activities. In the morning it was after breakfast, in the afternoon it was after snack. So for in the wait time while everyone'd wrapping up, we'll just do books or flannel boards. So the kids got bored. It was just sassy time, I would call it. So it was the perfect time to implement my math activities. [Whole group, 05/2013]

Interestingly, Sadie and Shelly were unaware that they were each curious about changing the same aspect of their classroom because they were in different PD study groups for planning.

Sadie and Shelly drew from their second year focal child's FoK as the foundation of their action research. Sadie based her classroom inquiry on Kyle and Shelly focused on Donte. Though these children have different ethnicities, race, family demographics, and home contexts, both children were interested in playing games at home. Sadie and Shelly used knowledge of the child in school but mainly pulled from their experiences conducting the ethnographic home visits to widen their approach to solving their classroom action research question.

> Shelly: I started thinking about how Donte was able to count numbers using one to one correspondence and I thought about the funds of knowledge that I knew Donte possessed. I knew he had a particular interest and familiarity with playing math related games with his peers during our discovery center time. [LS.Obs] My focal child has a hard time

> managing his body. You know he's always all over the place and he's just moving all the time and crawling all over, but one thing I noticed early on in the year is that he really was, had a nice focus on math skills and games and things that like hard games and games where he can manipulate a piece, like board games, things like that. So after doing a home visit with his family I realized that he is very aware of and likes card games. He likes to play go fish and he's really centered when he's doing that. So I kind of had him in mind but I also had my whole class in mind. [Whole group, 05/2013]
>
> Sadie: I basically did games because my focal child, when I went over to his house, we played on his Wii. He plays a lot of games at home. His sister plays a lot of games too; she's 12. At school, he will sit at a table and make up a game and he will play this game for most of choice time. [Whole group, 05/2013]

Data from the process of planning these projects provided evidence that focal children's interests informed the teachers' action research. These interests can be perceived as a meaningful way that young children contribute and participate as a contributing member of the daily household functioning (Hedges, 2011). These popular culture interests also shed light on children's inquiry processes and learning at home, which can be considered part of their FoK.

Aside from children's FoK, math played an important role in the teachers' action research plans. Both teachers intended the games to be used by all children in both their morning and afternoon classes, which in turn meant that they needed to easily be differentiated for differing math skills. Sadie and Shelly purposefully planned learning opportunities that used effective practices and strategies to meet individual and group needs (Epstein, 2007). This required materials that could be manipulated in multiple ways by children with different abilities. Sadie mainly selected activities from Pinterest that focused on counting, such as Monster Body parts, Lego stack, and Animal Sorting. (See Appendix E for game descriptions.) Shelly also accessed the Pinterest website for ideas and also used purchased math materials. Her games included Parking Lot counting, Mailbox math, and Frogs on a Log. (See Appendix F for game descriptions.) Sadie and Shelly both had an activity where children strung beads on pipe cleaners.

Data from both classrooms provided evidence that the open-ended math games used during transition time allowed children to draw connections between the materials and their FoK.

> *Bryson, Chad, Omar and Vanessa are on the carpet. Nikki comes over to the carpet with a bin of dominos. She starts to make a rectangle with the dominos.*
>
> 
>
> *Vanessa: That isn't how to play dominos. I know how to play dominos.*
> *Nikki: I know! But this is how I am going to play dominos.*
> *Omar: This is how you do it.*
> *Omar is putting them horizontal in a row with matching number of dots touching.*
> [Field Notes, 04/24/2013]

Nikki took the math materials intended for number symbol matching and built a shape with them. Omar tells Nikki the 'correct' way to play, which is representative of the traditional way to interact with dominos. Both children demonstrated their prior cultural understanding of the materials by labeling the activity as 'playing dominos' though Nikki took up the materials in a different way.

The range of math games and materials and how they implemented them was important when analyzing how Sadie and Shelly enacted FoK because they show insight to the theoretical underpinnings of their pedagogical decisions. Once they knew their action research plan, Sadie and Shelly grappled with how and when they would introduce the math games to their students. In a small group conversation, Sadie and Shelly worked together through their thoughts about how to operationalize their action research plan.

> Sadie: I'm not sure how to do the activities- if I should implement one a week, and then once we get some if it can be a choice of which activity. Or if I should just do an activity for a week and that's it.

> Shelly: It's hard to know like when do you rotate them out, or when do you introduce something new? They're still engaging with the old stuff and so I don't wanna take that old game away because they're really doing great things with it and so that's a tricky piece.
>
> Sadie: Yeah. Is it okay to have just one out if they're really engaged and maybe I planned on doing throughout the course six different things but if they are really engaged and I might only do two or three things for my project.
>
> [Small group, 02/2013]

At the end of the action research project, Sadie reflected that she and Shelly did implement the transition games differently.

> Sadie: I just had two activities that were purposefully out on the carpet each day or week. Whereas Shelly kept adding to hers and the children choose from a bunch of options. She had shelves with bins and her students could take their bins and do whatever. It was interesting to see what worked for her and what didn't work for me.
>
> Anne: Would you change would you do based on that or would you continue to do what you did?
>
> Sadie: Well, I would like to still put out two activities, just to kind of keep it a little more focused. But I would like to put out a shelf with old activities that they could go to whenever they wanted to. So I kinda would like to combine them.
>
> [Interview, 06/2013]

The teachers' decisions on how to provide materials to the children demonstrated the theoretical frame that shapes their pedagogy. Though different approaches, both Sadie and Shelly saw cognitive development from a constructivist perspective. They believed the child's social and physical environment provides support for learning and development (Vygotsky, 1978). When introducing a particular game or activity Shelly explained that,

> After the children finished eating, they would go over to the carpet area. Some of the activities had already been introduced, so when I started this up in January I had familiar activities out for them or games that they could easily manipulate themselves. And then as they, as we got into it more, we taught a new game or would show them a new set of activities that I had and then they would learn how to do it. [Whole group, 05/2013]

Shelly's intention for this math transition time was for children to enhance and extend their math knowledge and abilities through exploration rather than direct instruction of new material. In a similar manner, Sadie described how she introduced the math games.

> The activities were very open-ended. While the kids were eating I would introduce it, "this is how you can play the game, otherwise you don't have to but this is what you can do with it". A lot of kids played it the way that it was intended to use, and a lot of kids did a lot of free exploration. So it was really open ended and exciting to see all the activities they could do with the supplies. [Whole group, 05/2013]

Both teachers were upfront that the math games and activities have an intended objective though both anticipated child exploration of the materials.

For the most part, Sadie and Shelly encouraged the children to openly explore the materials and interpret them as they played with math concepts. There were times in Shelly's classroom when playing with the materials in the 'correct' way was an objective for the transition time. She explained to a group of colleagues in the 4KPD that her students demonstrated interest in the activities when they know how to play the game.

> For instance one of the things that was out was these little penguins and icebergs that they could make patterns with. That was out at the math table for sorting and pattering. The morning kids were able to do that cause I was able to sit down and teach them what a pattern looked like. I have not been able to teach the afternoon kids because of various needs happening in the room. So they're not using it in that same way and it's kinda been abandoned because they're not as familiar with it. [Small group, 02/2013]

The penguin sorting activity Shelly spoke of is a store bought math game. The small, plastic colored penguins fit on the peg on top of the plastic icebergs. The icebergs are of differing lengths (from 1-10) that resemble unit cubes glued together. By instructing her students on how to use the materials, the children took up the game to meet the intended objective.

> *Wayne is at the math table with the penguins. He has 5 black and 5 blue penguins on a ten cube-length iceberg. Shelly sees his iceberg tray.*
> *Shelly: Oh look. You have 2 patterns!*
> *Wayne: Yeah.*
> *Shelly: Front and back and what else?*

Wayne: Black and blue.
Evie takes her penguin pattern over to Shelly.
Shelly, "Can you tell me what your pattern is?
Evie explains that it is orange, pink, orange, pink.
Shelly: You know what? I noticed you have a pattern on your shirt too.
Evie is wearing a pink and white striped shirt.
[Field Notes, 02/20/2013]

Note that Wayne and Evie used the penguins and icebergs as intended- to make patterns. Both made A-B patterns and Wayne's advanced math skills are demonstrated by making a layered pattern of color and directionality. Shelly connected Evie's penguin pattern to her clothing assisting Evie in seeing patterns in other places besides school materials.

The broad action research project was based on one specific focal child's FoK however when children interacted with the open-ended materials, they were able to manipulate them in a familiar and intuitive manner. The teacher's role was to be an active and responsive participant in the exploration (Hyson, 2008).

Children are sitting on the carpet. Shelly is sitting next to Matt and Edward. They are playing the math gem game. Each laminated board has numbers 1-6 at the top. Under each number is an image of the corresponding dice. There are small white dice out and baskets of colored gems. Matt's board has gems under each of the numbers. He has 5 gems under 1, 4, 5, and 6. He has 4 gems under 2 and 3. Edward explains to me that you roll the dice and what number you roll, you put a gem on that spot. When Edward rolls a 2, he puts one gem under the number and dice 2 on his sheet.

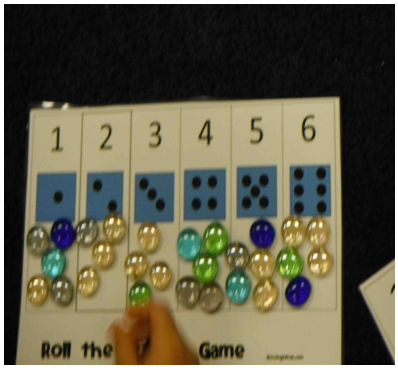


Figure 5

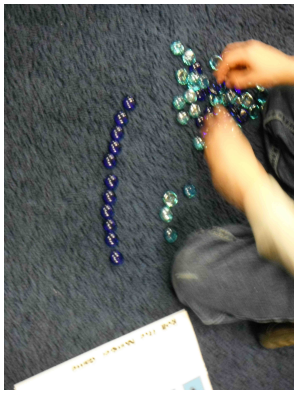


Figure 6

Matt dumps out the basket of gems.
Shelly: How many do you think are in the pile?
Matt: 100
Shelly: You think…

> *Matt: 30*
> *Shelly: So let' see.*
> *Matt sorts them into dark blue and light blue rows as he is counting. I hear him begin to count out loud. He then is quiet and is putting gems next to each other in the rows. Matt continues to put the gems out. As he does he makes a crescent moon shape with the gems and then has two angled rows vertically connecting the first arch and the second arch. He tells Shelly that it looks like underwear. She giggles and asks, "Does it"?*
> [Field Notes, 04/11/2013]

This instance in Shelly's classroom shows how the children took up the activity both in the intended way (Edward) and in their own imaginative way (Matt). Shelly supported Matt's interpretation of the game to be an estimation and counting activity. Though hidden, FoK was present in this activity when Matt labels his gem image as underpants. The obvious cultural connection would be that Matt may have this style of undergarment at home yet the week before this observation, Matt and his friend Danny talked about the book Captain Underpants and Matt admitted to seeing and liking the poster in the hallway of the school and that his older brother has those books. Neither Matt nor Shelly explicitly made this connection to his brother, however the space was facilitated and designed in a way that allows the free exploration of materials.

5.3.4 Child Self-Regulated Transmission of FoK

Both classrooms were designed and supported as a social and cultural space for learning. Children willingly incorporated their FoK into learning. This knowledge was influential for other children to extend their own knowledge and co-construct new meanings of the world together. At times, these instances were minor and quick whereas other times they evolved into an entire play scenarios that required time, materials, and other people to participate. Regardless of the scope, all moments of children self-regulating their FoK were embedded in learning and classroom curriculum.

Sadie shared an unexpected moment where she learned about a child's FoK to a group of colleagues in the PD program.

> Sadie: I had a little girl do something super cool today. It's the end of the day, we always count like how many boys and girls left and stuff like that. And we had some odd number, and so she had like her fingers all curled up, real funky like she was holding a ball in each hand. I said, "Well how many do we have altogether?" So she looks at her fingers and then she touched each one to her lip, and she didn't say anything, she touched each one to her lip and then said the right answer. And like, oh, that was so cool because she did it all by herself.
>
> Culebra: I wonder if someone taught her that, or if she just came up with that on her own?
>
> Sadie: I have no idea, she was just standing there in the middle of the room, and she, I, first I looked at 'em, like, how'd she put her fingers like that? And then just the way she touched them all and then said the answer. It was amazing.
>
> [Small group, 12/2011]

The child Sadie described incorporates a counting practice that she learns from outside of the classroom. Sadie was unaware of this sophisticated counting skill and situation at home yet know that she observed it, acknowledged that this technique was a powerful tool that this child uses to learn (Andrew & Yee, 2006).

In addition to having a space that allowed children to draw on their FoK, a teachers' relationship with the child assists this mediation. Shelly's relationship with her student Wayne and his family was built from having his older sibling in her class in years past. She had open communication with Wayne's mother and supports the families' travels due to his father's job. When engaging with classroom materials, Wayne and Shelly discussed not only his vacations but also geographic locations on the map.

> *Wayne and Shelly are sitting on the carpet looking at a large globe.*
> *Wayne: I am going to get lunchables on my vacation. And guess what? We had to drive 4 hours to drive to the other place we went. We watched alligators. If you are the alligator and I am me, this is how close I was. It was the Pacific Ocean.*
> *Shelly: Well the Pacific Ocean is where you are going but was the Pacific Ocean in South Carolina?*
> *Wayne: NO!*
> *Shelly: Right. It was the Atlantic Ocean.*
> *Wayne: I was in Florida.*
> *Shelly: Yes, you also went to Florida.*

Wayne: But my dad went to Mexico.
Shelly: See- way down here by the black line where the blue starts and the green ends (She is pointing to the coastline). This is San Diego.
Wayne asks about Africa.
Shelly: If you want to go to Africa, then you would have to get on an airplane and go WAY over here.
Wayne I have a friend at day care and he…
Shelly: Amello?
Wayne: Yeah. Amello.
Shelly: Where did his mom live?
Wayne: Yeah. His grandma lives all the way over here in Africa. And my…
Shelly: Did you know that Amello's mom lived in Africa and that is why his grandma lives there?
Wayne is now pointing to the Arctic Circle.
Wayne: Did you know Ms. Shelly that people from America had to travel all the way up here to get penguins?
Shelly nods. Donte is over by the globe and pointing to it and moving the globe.
Donte: My grandma lives here.
Donte points to Australia.
Shelly: Your grandma actually lives right by you.
She is laughing and so is Donte. She points to the State on the globe.
Danny and Wayne are on the floor talking and looking at the 2D United States map.
Wayne: If you live in the state you should like the university mascot animal, cause they are called the state mascot animal.
Danny: California that is where my cousins live.
Wayne: We live right here and here is Bearington and guess what? In Bearington. Hey guys, do you want to help me find where my mom's little brother lives? It is down here.
Danny: Mexico?
Wayne: Not Mexico. Texas. It takes more than a day to drive there.
Danny: Where is Disney World? I think it is in Florida.
Danny focuses all attention on finding Disney World. He suggests Granite City and other places but Wayne keeps saying that he doesn't know.

[Classroom Orbs 02/2013]

This conversation evolved from one of traveling to Shelly's knowledge about Wayne's friend who was not in the class. Shelly added information to Wayne's knowledge about Amello's family. Donte and Danny came over near the globe and hear the conversation. They both entered the conversation by offering their FoK of cities and vacation destination places. Danny nominated finding Granite City, which is a family-friendly food chain restaurant located within one mile of Grayson Elementary school.

As young children engaged in free play, they socially co-construct meaning with others and the classroom environment (Bodrova & Leong, 2008). Often, they drew on their social and cultural knowledge to replicate what they observe and experience in life. What began as one child's idea evolved into sophisticated and reoccurring play. Others entered the play by sharing an understanding of the cultural replication or by following others' lead. At the beginning of April in Sadie's classroom, Omar decided to use large wooden blocks to build a McDonald's Drive thru. He recruited other children in the area to help him construct the structure.

> *Within minutes there are block set up and Omar, Ted, Bobby, Oscar, and Mike are sitting in particular spots. Omar is sitting in the middle of the blocks and Oscar is behind him playing with blocks on the shelf. Mike is at the Lego table with a red bin tipped on its side and a long Lincoln log. On the block structure, a hollow box is the cash register and beanbags are used as Happy Meal toys*
> *Chris: We are* ***busy*** *on Friday.*
> *Omar: One hundred million bucks.*
> *Sylvia: What are you doing?*
> *Omar: Making McDonalds!*
> *Mike goes over to the red bin and sits behind it. He picks up the Lincoln Log. He is talking into it about toys.*
> *Omar: I need more toys!*
> *Oscar: I need more food!*
> *Mike holds up a block to his eye. He is looking at something.*
> *Mike (yells): The toys are coming! The toys are coming!*
> *Mike goes over to the shelf with bins. He spends some time looking at the bins. He takes a bin of plastic animals and dumps it behind Oscar. Oscar is holding up a long rectangular block.*
> *Oscar: You guys! Customers are coming!*
> *Omar: Talk to the customers.*
> *Oscar: I can't. I am looking through the binoculars. I can't talk on the phone.*
> *Omar talks into a block.*
> *Omar: I need more toys and chicken nuggets.*
> *Sadie is filling up water at the sink. Mike, Omar and Chris go over to her.*
> *Mike: I am the boss of McDonald's.*
> *Sadie: Oh you're the manager.*
> [Field Notes, 04/05/2013]

The children in this play experienced use a variety of materials in imaginative play to represent real life objects from McDonalds. All of the items used in this play were consistent classroom

materials that were available everyday in Sadie's classroom. Children utilized these materials to demonstrate social and cultural experiences and resources from their lifeworlds. In this scenario, the children replicated using cameras to see customers in line at the drive thru and the phone to order supplies needed. During a breakfast conversation on a very cold temperature week in April,

> Kyle: Guess who I saw at McDonalds?
> Sadie: Who?
> Kyle: Natasha.
> Sadie: No way!
> Kyle: Yes Way!
> Sylvia (to Corrina): What did you do last night?
> Corrina: Nothing, because my mom forgot.
> Nikki: We went to McDonald's but we didn't eat anything.
> Shamya: Did you play?
> Nikki: Yeah. We just played.
> [Field Notes, 04/25/2013]

It is important to add that this restaurant was an important aspect of many children's lifeworlds because their families often patronize this fast food place. A McDonald's restaurant was one block from the child care center and accessible by many those who live in the area and for families and staff to stop at on their way to and from the center. McDonald's was not only a place for people to eat but is a social space to gather. For these children, McDonald's was a cultural, community place that played an important part in the lives of children (Kincheloe, 2002). Families in Cappitown went there in the bitter cold winter months to be social meeting place for adults and place for children to play on the playland structure.

Verbal interactions were also used in addition to the resources in the classroom to contribute to children mediating their FoK. In the scene above, Omar emphatically said that they are busy on a Friday to which Oscar and Mike responded by expressing the need for more items. The communication between the children in the block area was seamless and quick. They all appeared to have background knowledge of observing staff at a McDonald's restaurant and knew

there were multiple roles to getting an order to a customer. The children shared their play with Sadie, who at that time was facilitating a small group activity, and she provided them with vocabulary to extend their knowledge.

About three weeks later, Omar and Chris rebuilt the wooden McDonald's structure. The children still played a variety of roles and materials from the block area were once again used for imaginative play. When the 'cashier' was asked for a bag to take the big mac and fries home, he handed the 'customer' a large hollow box and took the invisible money.

> *Omar: Chris, this is your cash register and this is my cash register. This is my money.*
> *Omar: I would like chicken nuggets, a happy meal and a drink.*
> *Chris: That will be $.25.*
> *Sylvia comes over to the block area.*
> *Sylvia: You guys made McDonalds?*
> *Chris: That will be $500 million dollars. Here is your order. He put blocks inside of the hollow block.*
> *Sylvia: Do you have a bag or something? How am I gonna carry all this home? Oh wait. I have an idea.*
> *She puts the small wood blocks into a hollow block. As she does she says what each item is.*
> *Sylvia: I got a big mac and some fries, some more fries, and a coffee and this… I don't know what this is. I didn't order this.*
> *Chad: Nuggets.*
> *Sylvia: That is exactly what it is!*
> [Field Notes, 04/25/2013]

Sylvia, the educational assistant, added to this play experience by incorporating the restaurant food names as she

Two weeks later in the block area, TJ extended Omar's block structure by vertically stacking large blocks.

> *TJ puts a thin cylinder at the top of the stack and sings, "bada bum bum bum" (the McDonald's theme song). TJ sits down on the step and looks through the hollow block. TJ picks up a rectangle block and holds it to his ear. TJ holds up a block to his ear to represent a fast food drive thru headset. He passes blocks through the hollow block.*

Figure 7

Figure 8

TJ (to himself): McDonald's. [Pause] Give me a soda.
Sadie comes over and stands next to the block structure.
Sadie: I will take a number 3.
TJ hands her a block.
Sadie: What about my drink?
TJ: Here's a soda.
Sadie: I want a milkshake.
TJ: Here you go.
Sadie: You didn't ask me what kind I want.
TJ: What kind do you want?
Sadie: Strawberry banana.
TJ turns around and pretends to push buttons.
TJ (to himself): Hook up strawberry banana.
TJ hands Sadie a block.
Sadie: My little person would like a mini happy meal.
TJ gives her more blocks and tells her this is the toy.
Omar: I would like a happy meal…[pause]…with a chocolate shake.
TJ gives him blocks.
Jason: May I have um…a root beer and Toy Story cake?
TJ: Your food will be done in a few seconds. Here is your ticket.
Omar comes back over to TJ with his block. He hands TJ the block.
Omar: Where is my chocolate shake?
TJ hands him a block.
TJ calls to Sadie. He points at the Lincoln Log bin that he is sitting on.
TJ: I am sitting on money. Mr. Crab.
TJ sings 'SpongeBob Square Pants. SpongeBob Square Pants.'
[Field Notes, 05/10/2013]

Through verbal interaction, teachers and children co-constructed shared meaning of objects and ideas that meld cultural resources of school and home. TJ conveyed his idea to Sadie who responded to him to continue to play and reproduce an authentic customer reaction. This was an example of a feedback loop in which Sadie used questioning and statements to continue the conversation (Pianta & Hamre, 2009). Interestingly, TJ further connected this play scenario of

McDonald's to his interest FoK of the TV show Sponge Bob Square Pants. In the TV show, Mr. Crab is the manager of a burger shop and Sponge Bob works as a cashier.

The children in Sadie's class continued to recreate and play McDonald's through the end of the school year. In June during an exit interview, Sadie brought up the McDonald's play when we discussed her students' recent interest in creating Dunkin Donuts in the block area.

> Sadie: McDonald's is still cranking. Especially when Omar's here. Sometimes it doesn't happen when Omar's not here.
>
> Anne: It's very intense.
>
> Sadie: It is! But so is McDonald's, I guess.
>
> Anne: Delicious. They're loving it, right?
> [Interview, 06/2013]

Sadie recognized that Omar is a leader in this play scene and understood his direct family connection to the restaurant. Sadie explained that his mother uses McDonald's as an incentive for "good" behavior and it has a lot of power with him. Sadie saw these as instances to "incorporate a small bit of funds of knowledge. It doesn't necessarily have to be a big old theme. It can be little things here or there, like something they do on the weekends like go to Dunkin Donuts." [Interview, 06/2013] She acknowledged that this was a step away from the traditional FoK approach of designing curriculum and saw how the cultural practice of visiting particular restaurants could be present in play.

In addition to free play, established routines also allowed for moments in which children demonstrate historically and culturally accumulated knowledge. When children could anticipate what would happen next, they were able to draw connections between the current experience and prior or lifeworld knowledge (Copple & Bredekamp, 2009). Sometimes the connections were

obvious and other times the teacher asked furthering questions to uncover how the child was making the associations.

Shelly class met on the carpet after breakfast for a whole group activity. During a thematic unit in which the class is studying frogs, they were on the carpet acting out the song 5 Little Speckled Frogs. Once everyone in the class had a chance to be a 'frog' and jump into the 'pond', they clap and Shelly told them she would leave the frog hats out for play time. From the back of the carpet, Kari, a reserved and quiet child in the class, shared:

> *Kari:We made pancakes.*
> *Shelly: Are we making pancakes?*
> *Kari: My mom did.*
> *The children on the carpet start to share that they like pancakes. A child nominates making pancakes. Shelly tells them that they don't have the supplies at school but she can stop at the store.*
> *Shelly: Oh. I will find supplies and we can make a list of what we need.*
> *Donte: I want to tell you something. Ms. Shelly, we made cupcakes.*
> *Shelly: If you would like to make a pancake list, stay on the rug. If you would like to make a choice anywhere in the room, then you may go.*
> [Field Notes, 04/16/2013]

Shelly spontaneously responded to Kari's and other children's cultural experience of making pancakes at home and turned it into a learning experience at school. Part of Shelly's curriculum included cooking projects and, as seen previously with dirt cake, Shelly connected academic content knowledge into the activities. She had those children on the carpet help her make a shopping list of ingredients and supplies that she would need. She helped the children by giving descriptive and beginning letter clues of items for making pancakes from scratch.

> *Shelly is sitting on the red chair next to the dry erase board.*
> *Shelly: What do we need?*
> *Xavier: We need a stove.*
> *Shelly: There is something you can use to make pancakes on is called a griddle. Have you ever heard of a griddle?*
> *Wayne: We need vinegar.*

Shelly: How does vinegar taste? I can bring some and we can check it. Do you remember when we made cookies, what did we put in our bowl that is light and white?
Wayne: Flour.
Shelly: What else goes into the pancakes? Sometimes when we are baking we need to add something else that is light and white.
Wayne: It comes in a box. Pancake mix.
Shelly: Pancake mix is a good idea. Something that starts with this letter (points to an e) and comes in an oval shell.
Wayne: Egg!
Xavier: Remember when we cracked an egg? (Smiles)
Wayne: Why?
Shelly: Sometimes we need to add something that start with this letter. It is liquidy and sticky.
Shelly writes the word oil on the board.
Wayne: Oil.
Shelly: One thing we put in pancakes to make it sweet…
Shelly writes the word sugar on the board.
Wayne: Sugar.
Donte: Frosting.
Wayne: Strawberries.
Shelly: I am thinking of something else that starts with an s. It's syrup.
Wayne: Oh I love it!
Kari raises her hand.
Shelly: Alight, I have a list here but I can't take the easel home with me. Can someone write it down for me? We need a paper.
The children run to the writing center to get paper, clipboards, and colored pencils.

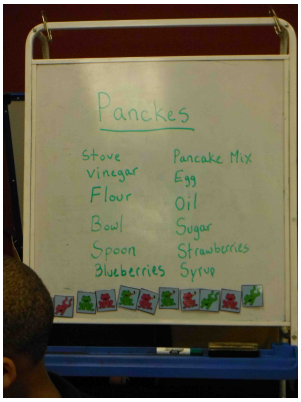


Figure 9
[Field Notes, 04/16/2013]

Brainstorming a list of ingredients and supplies was a way to see the children and Shelly's FoK for making pancakes. As Wayne suggested, a common ingredient is a pre-made pancake mix. When Shelly prompted for other ingredient ideas, the children appeared unsure of what goes into

a pancake recipe. Two days later, Shelly brought the ingredients and supplies (with a few additional items not included on their created list), including a cookbook.

Shelly: I have a cookbook.
Kari: We have pancakes.
Shelly: You make pancakes.
Wayne: My mom gets recipes from the computer.
Shelly: What is a recipe?
Wayne: It is how you make food. Cause you make food from food.
Shelly: It tells us how many of each of these we need.
[Field Notes, 04/18/2013]

Shelly used her professional FoK to make this cooking activity a math lesson. What goes unattended was Kari's restatement that her family had pancakes. Shelly focused on making this experience at school have a direct academic connection and did not ask Kari about her families' experience with pancakes.

Shelly's action did not appear to be an intentional disregard for Kari since Shelly often demonstrated an enthusiasm to understand and connect with her students' cultural practices. Further, Shelly took Kari's original offer of pancakes and designed an entire cooking lesson around it. This scenario showed Shelly's pedagogical decision to accept a students' cultural mediation into the school context driven by academic content and outcomes.

This act and others by Sadie and Shelly accentuated their conceptualization of the FoK in practice. Both teachers applied the culturally responsive framework in addition to the curriculum demands of the school, district, and or their professional training FoK. In the next section, I examine how Sadie and Shelly conceptualized FoK and how they made sense of this theoretical approach to practice.

5.4 Conceptualizing Funds of Knowledge

The purpose of this section is to explore Sadie and Shelly's meaning making as they learned about the theoretical underpinnings of FoK. Through social and situated learning, the

teachers in the PD program collaboratively discussed what the term *funds of knowledge* means and how to uncover children's cultural resources. Alongside studying the theories from the initial FoK project as well as other research studies, Sadie and Shelly drew from their prior knowledge of their students and daily classroom context to understand what the framework means to their practice.

The result? A non-linear and ever-evolving description of what FoK means to Sadie and Shelly. As part of an end of 4KPD program interview, Shelly and Sadie were asked to play a word recall game.

> Anne: Let's play a game. I want you to tell me the first thing that comes to mind when you hear the phrase, *funds of knowledge*.
> Shelly: What the children bring to our classroom; things that we might not even anticipate or think about and how we can incorporate that into our learning to help them expand on their learning.
> [Interview, 09/2014]
> - - - - - -
> Anne: Let's play a game. I want you to tell me the first thing that comes to mind when you hear the phrase, *funds of knowledge*.
> Sadie: What children bring from home.
> [Interview, 09/2014]

This game's intention demonstrated the participants' quick response to what FoK means at that moment to them. Sadie and Shelly articulated their conceptualization in this manner following an incredible amount of learning, collaboration, reflecting, and identity exploration.

In a review of research related to FoK, Linda Hogg (2011) synthesized the various ways FoK researchers appropriated the term. The foundational work (Vèlez-Ibáñez & Greenberg, 1992; Moll, et al., 1992) framed FoK with Vygotsky's (1978) sociocultural framework and Lave and Wenger's (1991) situated learning theory. In this initial study, the aim of the Tucson Project (Vèlez-Ibáñez & Greenberg, 1992; Moll, et al., 1992) was to deconstruct deficit perspective thinking in education and recognize the multiple spheres of activity, resources, and knowledge

that all children possess, regardless of race, socioeconomic status, and ethnicity.[13] Further, teachers gained access to these knowledge resources through ethnographic home visits and in turn designed learning experiences that drew from them. From its inception, scholars have taken this foundation and interpreted FoK within a number of theoretical frames. Not surprisingly, much of the research conducted on FoK centers on sociocultural and critical theory, which reflects the premise of the original research project. From the collection of research she analyzed, Linda Hogg (2011) concluded that researchers used the term under five main theoretical groups: (a) Socio-cultural theory, (b) Critical theory, (c) Hybridity theory, (d) Systems theory, and (e) Difference theory of caring.

Given the range of interpretation, I was interested in examining how Sadie and Shelly made sense of the FoK framework. The analytic questions I attempt to answer in this section are:

(1) How do Sadie and Shelly understand the term FoK?

(2) How do the cases describe the role of FoK?

I draw from the five main theoretical frameworks listed above.

It is important to note here that there is no "correct" way to understand FoK. The concept, much like culture, is neither linear nor static. It is dynamic and cyclical. The conceptualization of FoK continuously evolves over time. In an attempt to avoid creating a hierarchy or trajectory of development in understanding FoK, I thematically present the various ways Sadie and Shelly interpret the framework and the role of using FoK. Also, just as studying culture is a 'messy' endeavor that incorporates tightly interwoven aspects; the data in this chapter do not fit neatly

[13] This list is not exhaustive. The cultural deficit perspective encompasses negative beliefs and assumptions regarding the ability and aspirations of systemically marginalized people. The three listed here, race, socioeconomic status, and ethnicity are examples of common categorical descriptors addressed in the cultural deficit perspective.

into theoretical categories. Overlaps exist between many of the frameworks described. I strive to represent the participants within boundaries of the theoretical frames yet recognize and address the areas where conceptualizing FoK crosses these invisible parameters.

5.4.1 First Impressions

Sadie and Shelly enrolled in the 4KPD without knowing, specifically, the term "funds of knowledge". At the end of the first year of courses, Sadie shared "I never even knew about funds of knowledge before this. I guess I've thought about their home lives and what they bring to school, the things that they're into and that they connect to that. But never in such an area that it would influence my teaching the way that it has." [Interview, 05/2012] Throughout the four courses, the teachers accessed multiple articles [See Appendix A for a list of course readings], engaged in discussions, and completed reflections to assist in shaping their interpretation. This design, reflective of a *community of practice*, allowed teachers to construct their own understanding of FoK along with accessing others' ideas of the framework to further inform their sense making.

Shelly shared that term FoK is broad and unfamiliar to her and her colleagues in the PD program. "When many of us were trying to dissect what that meant, we all had different ideas and what we were supposed to do with that." [Interview, 05/2013] Though the terminology was new, the concepts included in the framework resembled elements already present in their practice. Teachers quickly connected components of this work as already present in their beliefs and practice. Sadie admits, "I never even knew about funds of knowledge before I came to this. I've kind of thought about their home lives and you know, what they bring to school but never in such an area that it would influence my teaching the way that it has and the things that they're in to and that they connect to." [Interview, 05/2012]

Sadie and Shelly accessed other teachers' thoughts and connections to practice as they studied the framework. Both teachers actively listened to their peers as the collective group grappled with what the concept meant to them individually.

> Janet: I knew that children come from different cultural backgrounds and different learning styles but I never really thought of what's in their home.
>
> Shelly: I had never heard that term before. I've never put it in a term of funds of knowledge.
>
> Mariana: And I guess what I've learned is that there's something to take from what their home practices are and use as how you teach, like modify your teaching style not only based on like what you see from them in the classroom but what you find out about their home life.
>
> Shelly: Well, when you find out about their home [practices] then what you see in the classroom makes a lot more sense. If you can say oh that's why they're doing something. You can just get to know the families.
>
> [Small group, 05/2012]

In this discussion, Shelly built from Mariana's description of FoK and added that it aids in understanding children's behaviors in the classroom that they have gained from their lives outside of schooling. As Shelly said, from a deeper understanding of the child, the teacher was able to justify the behaviors and social interactions to begin to make sense of why children are exhibiting them at a particular instance in the context of school. Sadie and Shelly also understood the FoK framework to establish or deepen their relationship with children and families.

Moving beyond a statement of what the term meant to them, Sadie and Shelly developed an understanding of the theoretical framework and the role it played within their contexts. Through individual reflections and group conversations, Sadie and Shelly explored the possibilities of using FoK in their practice. Over time, the teachers saw the role of FoK as a tool to bring in children's cultural (a) experiences, (b) materials, and (c) expertise.

5.4.2 Culture

As teachers uncovered a family's social and cultural ways of knowing, they began to label this as 'culture' and place boundaries on it as an entity. Sadie, Shelly, and Chotu discussed the benefits of understanding children and families' culture.

> Shelly: It's always interesting to me too when children bring things in that they do at home. Especially children from different cultures -- how they do things, the books that they're reading, or things that they have. It's nice to see those different things—
>
> Chotu: For the child I think it goes back to the same thing you were saying before, that they need to feel safe and trust their environment to be able to share their culture, share what they're doing or their strategies for learning at home so they don't feel like, if they know something differently that it's inherently wrong. It's just something different that they can share.
>
> Sadie: Also, the parent feeling safe to share and not be told, well, that's not the way we're teaching your kid at school.
>
> [Small group, 01/2012]

When Shelly used the phrase "bring things in" she was not speaking specifically about tangible items but also 'funds' of cultural knowledge that children possess. In the process of labeling social and cultural practices and resources as FoK, teachers used observations and interactions as a chance to 'look for things' or label skills and abilities as 'culture'. This inevitably placed boundaries around the notion of culture making it a static notion possible to be 'brought into' the classroom.

The difficulty in defining 'funds' is reminiscent of the challenge to define 'culture'. A general misconception of 'culture' is that it simplifies the complexities of people, behaviors, languages, values and beliefs and bounds them into uniform categorizations (Geertz, 1973). A long held belief that groups of people share the same traditions, characteristics and practices is to oversimplify the intricacies and ever-changing notion of 'culture'. The assumption that cultural

coherence of behaviors exists within groups is not always accurate and essentially limits the notion of diversity.

The same can be true in considering what a child's 'funds' are. The tendency is to observe and identify a practice, interest, or resource as a 'fund' of knowledge. From this, curricular and pedagogical decisions can be made that draw from this particular 'fund'. In the third course of the PD program, Shelly included what she considers FoK when she reflects on her home visit to Donte's house.

> I started thinking about how Donte was able to count numbers using one to one correspondence and I thought about the funds of knowledge that I knew Donte possessed. I knew he had a particular interest in games and counting numbers in those games, and I recalled that I had recently sent home a packet containing a deck of cards and some math card games that was provided to us by The District to provide a Home –School Connection for Family Outreach. When Donte received his packet he exclaimed, "Hey, I have this at my house! My mom plays these with me!" [Shelly, LS.Obs]

Shelly identified Donte's FoK as not only his interest in games but also the math skills he learned at home with his family.

> We have been working in small groups, at carpet time, and through play on mathematical knowledge at school to build upon the funds of knowledge my students have brought with them. In looking specifically at Clara, I have been paying special attention to her mathematical knowledge, and through my observations, her funds of knowledge for learning mathematics don't seem to be the strongest. [Sadie, HVR]

Sadie used the term 'funds of knowledge' synonymously with 'skill'. It is not that Sadie and Shelly misunderstood FoK because, as proven above, they perceived it as multifaceted, household practices and including child interests and popular culture influences. Rather in the same vein as the traditional 'neatly bounded' view of culture, they reified children's FoK to represent skills and abilities learned in children's lifeworlds. Again, not necessarily "wrong" just they way Sadie and Shelly made sense of the framework.

5.4.3 Experiences

Previous case study research on teachers' experiences with the FoK framework points to various interpretations of the definition and applications of the term into practice (Hogg, 2011). Most notably, teachers saw the framework as a way to deepen their understanding of the child outside of school to identify and label skills that are not seen in the classroom (Andrews & Yee, 2006). The idea that children bring in FoK to the classroom includes practices and experiences in addition to concrete objects. "They bring from their home environment from their home culture to the classroom. These rich experiences can be anything, from they do on the weekends, how they set the table, or their family activities." [Shelly, Interview, 05/2013]

For Sadie and Shelly, FoK was a way to recognize and build on the rich knowledge and resources that children naturally bring to school. Sadie shared an example of how she welcomed a child's experience outside of school into the classroom context.

> One of my kids is African and there was a day where she wasn't [at school]. They had a festival, kind of like a barbeque type thing, and she came back with henna on her hands. So we painted on [the kids'] hands a little. I just kind of try to build off the things that they come back and tell that they do on the weekends. Then if their excited enough about it, we'll just keep talking about it.
>
> [Interview, 10/2011]

Both teachers saw FoK as valuable for helping young children bridge a connection between home and school life and learning.

A natural occurrence then was to directly transfer this perceived entity across contexts. To merely reproduce household knowledge in the classroom was not the goal. "Instead, drawing on household knowledge, student experience is legitimated as valid, and classroom practice can build on the familiar knowledge base that students can manipulate to enhance learning in mathematics, social studies, language arts, and other content areas" (González, 2005, p. 43). Shelly used her knowledge of Donte's interest in playing cards to set up an academic activity for

him to play Go Fish with his peers. Shelly's role during the activity was to observe and take notes on the math skills he demonstrates.

> Donte exclaims, "I know that game! My mom plays it!" This was a more difficult game for Donte for two reasons. One – I used a different card deck that did not isolate the numbers in a little box, as they had been in the memory game. Two – Donte is not yet identifying numerals, and playing this game using the card deck required that he know what number he was asking for. He frequently asked me to help him identify the number, and needed assistance to count the numbers, as they were not clearly defined. This game did not hold his focus for long, as the concepts in this game were more challenging. I realized that although Donte's funds of knowledge allowed him the familiarity with the name of the game, he did not have the necessary experience to play with proficiency. He did enjoy the process of the game however, and I may use it as a tool to help develop his awareness of numeral recognition. I will make new cards that will hold his interest as well as give him a clear awareness of the number and the quantity it contains. [Shelly, LS.Obs]

Shelly recognized that as a child's FoK crosses contexts, skills and abilities change just the social actors, rules, and behaviors change. Shelly extended this reflection by noting her intention to make a cultural experience at school that built from his FoK yet matched his current math skill level so he can be successful.

5.4.4 Cultural Artifacts

A common notion that both Sadie and Shelly expressed throughout the 4KPD was that FoK referred to the culture and socially learned practices that children "brought in" to the classroom. "It is the experiences and the knowledge that kids bring to school from their home life. Things that they can contribute to the class." [Sadie, Interview, 06/2013] In an in-class activity, Shelly and a fellow 4K teacher, Ivy, discussed how FoK is represented in fictitious vignettes of teacher practice. Shelly said "[this teacher] incorporates nature into her centers too which is really kid friendly because these are things that they can see, like sticks and stones outside. That's bringing in a fund of knowledge. It's something they're familiar with." Ivy furthers Shelly's thought that FoK is found in familiar objects because this teacher selects items

that represent nature that is common to this part of the state. [Small group, 10/2011] In a similar way, when discussing how to integrate FoK into mathematics learning centers, Sadie suggested

> Maybe it could be like a materials thing like if a kid is really comfortable counting guitar picks and they're just not comfortable maybe counting something else kinda bringing that material in and blending things together to see that it can spread across all their environments. [Whole group, 11/2011]

Sadie conceptualized FoK here as a way to bring a familiar object into the classroom to support and encourage a child's engagement in mathematics. Both Sadie and Shelly made the connection of bringing in items that were present in the home environment or community into the classroom. As the teachers developed an understanding of the framework they relied on drawing on young children's familiar resources, both tangible and abstract to inform their pedagogical and curricular decisions.

5.4.5 Expertise

As Sadie and Shelly deepened their understanding of how the FoK framework built a connection with families, they both stated an importance in knowing the child's daily routine. They perceived FoK to be a valuable way to perceive children in a holistic manner. Shelly recognized the idea of limited time with young children. "We do get them for just such a little small snip of their day. You know and there's not a lot that we see sometimes." [Whole group, 11/2011] Knowing that there is so much more unknown about children's lives outside of school, Shelly stated:

> It's really important for us to know these children as whole children and not just as beings in our classroom, and that, so much--especially in 4K, where so much of their day is not spent here, when we only have them twelve hours a week, and we have all these expectations, and we can get lost in the fact that we're supposed to be meeting these standards, and we're supposed to be getting them to know these many letters or numbers, or whatnot, and forgetting the, the skills and things they're bringing to us can greatly help with that. [Interview, 05/2013]

Sadie echoed that the times spent in 4K, about three hours, is just a small slice of a child's day. "Well, I always think about it as- this school is just one part of their life, and it's like the "school life" where it's very different than at home. Well, it kind of evens out in daycare, but most of their life is at home." [Interview, 06/2013] Amidst the bookend comments of time outside of school outweighing the three hour 4K session, Sadie added a caveat about her view of the role of child care. She acknowledged that some of the children enrolled in her 4K class also attended London Bridges for wrap-around care. For several of her students, that meant they would spend an average of 40 hours a week at the center. Slightly more ambiguous, Sadie made the distinction between child care sites for 4K from those housed in elementary schools when she discussed where children learn particular skills and abilities.

> Sadie: I did a lot of assuming. My focal child, Clara, has been at that day care for two years. So it was kind of hard for me to look at what she learned from school and what she truly has come with from home.
>
> Anne: And her experiences in day care are part of her funds of knowledge, too.
>
> Sadie: True.
>
> Mika: But you're saying you don't know where it came.
>
> Sadie: Yeah. I don't know if that was a funds of knowledge from home or a funds of knowledge from school. I kind of looked at them as two different things, I guess. Even though they're both funds of knowledge, I was looking for more of the home funds of knowledge than the school knowledge.
>
> [Small group, 10/2011]

As Sadie made sense of the role of FoK in her particular context, she took into consideration the amount of time her students are immersed in the cultural practices of London Bridges.

When considering the division between home and school practices, Sadie and Shelly most noticeably focused on instances when the language spoken at home is different than English. A mixture of emotions was present when they discuss language differences. Reactions

ranged from feelings of disconnect with families, concern over how to share information, and worry about families' comfort at school functions to excitement and enthusiasm to learn about the families' home language and how to incorporate aspects of it into the classroom. Shelly admitted, "the language barrier is the biggest for me. I feel at a disadvantage because I want to share information and I don't know how to get it across." [Interview, 09/2011] In the process of making sense of FoK, Sadie and Shelly recognized the significance of home language as the child's expertise.

In the 4KPD seminars, language barriers were discussed when study groups brainstormed ideas for an activity for FMN that could be taken to and up at home.

> When I think about having something that can go home it has to be interesting, fun, engaging for people. And not too difficult; like instructions for a game that would be easy enough for a family to understand where English is not the first language in the home. Because when the family does speak English, I sense sometimes that like the 'sures' and the 'yeahs' are coming because they're not understanding the depths of what I'm saying, so I have to back up and make sure this'll be an easy thing, but yet challenging enough for him to explore. [Shelly, Small group, 02/2012]

This is an example of how Shelly took a step to connect with this family that had a different linguistic background. She sought new ways to communicate with immigrant families to strengthen their relationship and demonstrate that value in their cultural beliefs and practices (Adair, 2011).

Sadie viewed her second year focal child, Kyle's, home language as part of his FoK that he brings to the classroom. Kyle fluently spoke English at school though at home the family predominantly speaks Albanian.

> Kyle's parents are from Kosovo, but they speak very good English, thank god because even with their heavy accent, it's still sometimes hard, I have to pay extra attention. My kid's parents do not speak English at all. They talk it to him, it's purely Albanian and if he'll speak English they'll say, we're home, it's time for Albanian. Even when they pick him up they'll sit in front of me and converse, and then every once in awhile Kyle's mom

> turns and start talking to me in Albanian and then go-well he said, blah blah blah. Or 'It's good'. [Small group, 11/2012]

Sadie found the family's history of moving to the United States and their use of Albanian at home fascinating. [Sadie, HVR] What was unique for Kyle is that his immediate cousin, Oscar, was also enrolled in Sadie's class. Oscar's family also spoke Albanian at home. At school, Kyle and Oscar spoke to each other in Albanian and engaged classmates and Sadie in a playful questioning game of 'Do you know this word in Albanian?' or will say the English word in Albanian. [Interview, 06/2013] Sadie labeled these demonstrations of his linguistic knowledge as his FoK because it was a cultural practice Kyle brings from home (Riojas-Cortez, 2001). She also added Kyle's view of this lifeworld practice as being exclusive when he told his peers, "Well, you don't speak Albanian, so you can't come to my house because we speak Albanian at home." [Interview, 06/2013] From both Sadie and Kyle's perspective, home language was a valuable resource that could be incorporated into the classroom as FoK.

Shelly's experience with Nick, her first year focal child, was similar in that the family spoke Tibetan at home. What was different is that when Nick began 4K he did not demonstrate a strong use of English at school nor did he attempt to teach the class words in Tibetan.

> Nick had spent the first weeks of school not really participating in the circle activities, yet while sitting at circle time in the third week of school, Nick proceeded to look at the calendar on the wall and said, "1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20! That's 20! Today is 20!" It occurred to me that Nick's style of learning is to take everything in and then recall it later. Nick's father had mentioned that Nick sees things on television and then imitates the actions he sees. It seems as though Nick is a highly visual learner. In terms of the way Nick is learning mathematic skills, this seems to be the approach he has adopted for himself. I had mentioned to Nick's father one day that Nick enjoys math at school. He responded that he has been doing more counting at home, but was not able to elaborate for me on what things at home might lend themselves to this. [HVR]

Shelly reflected that the families' focus on Tibetan at home was largely due to communicating with Nick's grandfather who did not speak English and in part because all family members were

learning English. Through the ethnographic home visit, Shelly's concern about his use of English was lessened when she found out how Nick is learning at home. "He really thinks about things in his head. So like he can count by tens. That's what he does at home with his parents. They really are interested in helping him and doing these things with him." [Small group, 03/2012] Shelly went on to share that given the differences in contexts, she recognized the difficulty she faced in designing school curriculum that reflected his home practices and skills.

For Sadie and Shelly, the FoK framework challenged the traditional approach of schooling, which positioned academic content and standards at the forefront of curriculum. There was an implicit pressure in 4K to prepare children for the next years of schooling. Shelly recognized this yet explains how 4K was a unique entity in itself. "There is this part where you are helping them learn things that are going to help them succeed in their school years but then again 4K is a three hour program that is very child-directed, play-based and informal." [Small group, 01/2012] A common teacher perspective was that if the children are not in school learning the things necessary for success in later school grades that the children are missing out. Shelly continued,

> Sometimes we forget that they are learning those things at home; they are just doing it differently. It's hard because I think in all of us there is that tendency to assume things without looking at the full picture. I think it happens naturally and a lot. [Small group, 01/2012]

The FoK framework shifted the perception that what children learn at home is valuable or *as* valuable as academic content knowledge presented at school (González, Moll, Floyd Tenery, et al., 2005). Teachers understood daily household practices as the foundation for functioning and learning. In turn, this altered their view of lifeworlds and positioned families and children's knowledge as skills and expertise. Sadie reflected,

> They have all of these experiences, and they grow accustomed- especially in their young life to this [home] way of learning, and gathering things about their world. Then they come to school, and it's just the 'school way' of life, and it's so different than what they know. So it's hard for some kids to grow accustomed to [the school way]. So funds of knowledge is important because it helps kids connect what they're learning to what they already know. [Interview, 06/2013]

Drawing this connection between learning that occurred in home with the context of schooling is important in ECE. Young children entering schooling for the first time typically learn new and particular cultural practices and expectations. These behaviors often do not reflect those of children's homes (Heath, 1983). "So often we tend to bring our classroom expectations to the children. We say, 'you must learn this, this, this,' and it has to happen in this time frame. Whereas we forget to think, what do you already know and how can we expand on that?" [Shelly, Interview, 05/2013] By uncovering the rich knowledge that children possess from home practices, teachers were able to assist children in transmitting resources between their lifeworlds and the context of the classroom.

> Our educational culture has been 'you send the child to school, they learn, and then they go home. You're sending them there to learn a skill and that's our job. Then they go home and the child's job is to do what the family things is and they don't think about mixing or it being compatible in any way. I think that's something to wok on. I think it's going to be a long process but it's obtainable. I think it's definitely something where we have to bridge a lot of barriers before anything can happen. [Shelly, Interview, 05/2013]

Difficult? Yes. Impossible? No. Shelly articulated the need to move past perspectives that there is only one "correct" way to learn which is the "school" way. Challenging this hegemonic cultural notion that academic content was learned at school doing schooling practices can be difficult for teachers to work through. Sadie and Shelly used the FoK framework to make a conscious decision to rethink personal and professional assumptions about families, how children learn, and what knowledge is valued.

For teachers working to frame their perception of families from an asset-based perspective, rethinking family involvement was key. In a small group activity during the 4KPD, teachers discussed a common deficit view that those families who are not present in the school and events 'don't care about school'. Teachers examined the need to shift their assumptions about families to recognize the multiple life demands that can strain their involvement in school. During the conversation, Shelly shared an authentic interaction with a 4K parent. Shelly vulnerably admitted her perception of the family was that they didn't care what was happening at school until the parent came to her and shared that she was working two jobs and had a new baby at home. The mother expressed her appreciation for Shelly and the 4K program since she busy and needed to know her son was in a place where he would thrive. [Small group, 01/2012] Shelly saw the FoK framework as a way to bridge the gaps that exist between home and school and consider the families' perspective of schooling. "Fund of knowledge is critical, especially as we're thinking about moving our schools in the direction of incorporating more family background stuff in. It's a community effort. We can make them feel valued, heard, and that their culture matters." [Interview, 05/2013]

As Norma González (2005) argued, teachers can begin to dismantle the reification of culture by looking deeper at the details of individuals and groups and by validating all lived experiences as knowledge. This act of building connections and relationships with children and families along with honoring lifeworld experiences disrupts the discourse of deficiency and difference. To break down these fixed parameters, Sadie and Shelly used the FoK framework to investigate the social networks and the cultural knowledge and resources present in their everyday functioning. There was potential for a lasting shift in the teachers' attitudes and

beliefs of children and their families and in disrupting the deficit model discourse (Oughton, 2010).

Chapter Six- Discussion and Implications

In this study I described how two teachers understood and took up FoK in the classroom, assisted children in mediating their social and cultural resources across varying contexts, and designed a space where children feel empowered to actively mediate their own FoK. I was interested in examining Sadie and Shelly's use of ethnographic strategies during home visits and family interviews as well during the school day to understand students' cultural practices and ways of knowing. Overall, I wondered (1) how two preK teachers make meaning of children's *funds of knowledge*? (2) how they use this framework to rethink their classroom environment, interactions and designing of learning experiences? and (3) what factors influenced pedagogical and curricular decisions in an early childhood classroom contexts? Through data collection and analysis, I became increasingly curious about how Sadie and Shelly co-constructed a space with their children to empower them to mediate their own cultural knowledge and resources. In this chapter, I summarize the major findings for each question, discuss implications for practice and theory, and make suggestions for future study.

6.1 Discussion

A central tenet of the FoK framework in education is to design learning experiences that draw from children's previous historical, social, and cultural knowledge. Similarly, as teachers learned about the framework they drew on their own professional and personal knowledge (Graue, et al., 2015; Hedges, 2012). Teachers' daily practices and decisions were filtered, at times unconsciously, through these experiences and understandings (Hammersley, 2005). Previous experiences, knowledge of EC, and general approaches to learning all influenced how Sadie and Shelly made sense of FoK. Less obviously, the teachers' dispositions and willingness to teach a diverse student population also shaped their sense making.

Professional experience and the classroom context played central roles in shaping Sadie and Shelly's understanding of children's FoK. Theory and research-based knowledge were present as they identified and understood children's lifeworld resources and knowledge. Teacher education programs provide teachers with a theoretical basis for their practices. Sadie and Shelly attended teacher education training around the same time yet at different chronological ages and at universities in the state. They gained knowledge of ECE theories of learning that informed and was informed by their practice. Interestingly, both teachers worked in ECE for many years prior to attending higher education and have a vast and rich amount of professional experiences working with young children. The way they discussed the value of social interactions (peer-to-peer and adult-students) and how children learn demonstrated that Sadie and Shelly possessed sociocultural perspectives prior to learning about FoK. Shelly specifically addressed this when she shared that she believes children are always learning even in daily mundane and routine tasks. Sadie's pairing more knowledgeable peers in play and small groups reflected social learning principles already present in her practice.

Teachers can enhance a social, cultural, and historical perspective by incorporating students' social and cultural histories and ways of knowing into learning experiences (Souto-Manning, 2013). The FoK framework engages teachers as assistants in the mediation of students' cultural ways of knowing between the structures of home and school and attributing a value to their cultural resources (Oughton, 2010). Teachers did this by designing learning activities based on children's FoK. Teachers used the framework to transform social and historical ways of knowing into curriculum to bridge learning experiences across contexts.

Aside from studying at different universities, Sadie and Shelly had other differences in their professional backgrounds. Shelly's special education training lead her to have a strong

individual skill mastery-based perspective of how children grow and learn. She focused on children's abilities and aimed learning tasks to promote skill acquisition. When she discussed her focal child Nick's home play with the iPad she referenced the effects of screen time on his physical and cognitive development. Sadie also focused on children's development, specifically skill mastery. She often spoke of her students' particular abilities in literacy or mathematics when discussing what they *know*. Both teachers zeroed in on children's academic skills both in and outside of the classroom. This reflected the overall goals of her corporate center and also of their teacher education program that included early learning standards.

Though teaching experience is viewed as more rigorous when considering factors that inform practice (Tobin, 2007), personal FoK also contributes to pedagogical decisions (Hedges, 2012). Sadie frequently discussed with colleagues, her admiration of the website Pinterest. Her hobbies outside of teaching included making crafts and cooking. A self-identified visual learner, she used websites with procedural steps as guides to complete tasks. In her teaching practice, she acknowledged the multiple intelligences of how children learn (visual-spatial, kinesthetically, musically, etc.) and was steadfast on sticking to a daily routine. Sadie rarely strayed from the daily structure and kept materials consistent. She also included her personal interest FoK of TV shows, cooking projects, pets, and video games into conversations with children.

Shelly drew from personal learning moments in school to inform her practice and her understanding of FoK. To connect with families, Shelly used her perspective of being a mom of two as a way to understand the demands on families outside of school. She also used personal experiences to shape how she approached children's sharing of their thinking. In her story of learning a different strategy for solving math facts at home, she referenced her teachers' disapproval and how that made her feel. This personal experience stayed with Shelly throughout

her childhood and is present in her current work. Because of the way the situation made her feel she actively worked to provide her students with a space that allowed them to bring in problem solving strategies that may be different from traditional curriculum. She honored multiple ways to understand a topic and encouraged children to express themselves in her class.

Teachers' personal confidence in subject content knowledge impacts their practice. When EC teachers are uncomfortable with their understanding of a particular subject they may be hesitant to provide support or tentative to extend the content knowledge in play (Graue, Whyte & Delaney, 2014). "Therefore, it seems likely that teachers' beliefs and their lack of subject content knowledge will impact both on the curriculum provided for children and on teachers' ability to effectively construct knowledge with children" (Hedges & Cullen, 2005, p. 16). At times this was reflected in Sadie and Shelly's practice; however, they both demonstrated behaviors that challenged this interpretation of practice. Sadie, with her admitted abhorrence of mathematics, embraced the idea of enhancing the learning of math in her classroom. She was enthusiastic to modify the transition time between meals and play by incorporating math games to further develop children's understanding of mathematics and their academic skills. On the other hand, Shelly was very confident in her own math knowledge and her ability to teach it. When children engaged in play or learning tasks that had potential to have number and counting highlighted, Shelly frequently enhanced the activity by extending their thinking.

Because the term 'funds of knowledge' was unfamiliar to them, Sadie and Shelly drew from their previous understanding of family involvement and culture to socially construct with colleagues new knowledge of what the framework meant. Essentially, the study groups helped scaffold their evolving understanding of FoK. After studying the components and theoretical background of FoK, Shelly admitted that she gained new terminology for practices and beliefs

that she already possessed. She was already making connections with children and families the context of the classroom and when time allowed for it, outside of school. Since Sadie had siblings of her focal children in previous years, she drew on her prior knowledge of the family's social network and cultural practices (Gregory, Long, & Volk, 2004 or Hedges, Cullen, & Jordan, 2011). What resulted for Sadie was a comparison of her focal child's, Clara's, interests and skills to her siblings' FoK. Pushing further on this idea of difference of FoK within a household is determining the difference between a child and adults' FoK (Esteban-Guitart & Moll, 2014).

Sadie and Shelly's prior understanding of culture were present as they made sense of the framework. Both teachers understood children's FoK as a bounded entity that could be "brought into" the classroom. Their understanding focused on one particular "fund" of knowledge instead of seeing it as "funds" that are constantly evolving over time (Oughton, 2010). Viewing cultural practices this way bounded the historically and socially rich experience, interest, or expertise into a bounded 'fund'. This perspective is much more of a 'direct transfer' or funds from one space to another as opposed to a reciprocal 'transmission' or mediation between contexts. As stated previously there is no one "correct" way to understand FoK; however, its power is limited by misunderstood or oversimplified understanding of culture. By simply adding ethnic cultural practices and artifacts into curriculum, students experience culture in a shallow way (Sleeter, 2012). In response to this, Oughton (2010) suggested that the use of the FoK framework by teacher researchers requires critical self-reflection to avoid bounding culture as 'fixed' or making generalizations about an individual's cultural practices to an entire group.

In this study, the teachers perceived ethnographic home visits as a powerful tool to build relationships with families. This is consistent with previous literature that examined the impact of employing ethnographic methods to make sense of families' home practices (Moll, et al.,

1992; Vèlez-Ibáñez & Greenberg, 1992). Sadie and Shelly admitted that previous to the learning about FoK they formed relationships with families at drop off and pick up times as well as conferences. This information tended to be surface level or centered on academic development and skills in a school context. Sadie and Shelly recognized that to get to the heart of daily household functioning and cultural learning, teachers needed to experience and observe this other context (Andrews & Yee, 2006; González, et al., 2005). They also found that by asking about extended family and those people who are important to the child, they began to understand the impact social circles have on children's FoK (Moje, et al., 2004).

Evidence in this dissertation demonstrates the value of conducting an ethnographic home visits because both Sadie and Shelly gained insights into their focal children's ways of knowing and families' FoK that was not present at school. Previously held assumptions were challenged (Foote, 2009). Shelly's rethought her beliefs about Nick's linguistic abilities following her home visit observation and family interview. Sadie witnessed the strategies (repeat after me) Clara's mom used to promote learning numerals. With these deeper understandings Sadie and Shelly returned to the classroom context with a more holistic view of the student (Andrews & Yee, 2006; Moll, et al., 1992). Also, they used the gained insight to understand behaviors and practices exhibited by the students at school.

Teachers taking on ethnographic methods must acknowledge the already established relationships and roles with families, namely the power differential. A teacher can enter a home to learn yet they do not lose the identity of being a teacher and the inherent authority that accompanies this role (Zipin, 2009). Cathy Amanti (2005), a teacher in the foundational FoK research project, writes that in training to be an ethnographer, she and her colleagues did not detach from the school community. No matter what they did, they were still teachers. Sadie and

Shelly wrestled with the same tension in their role of simultaneously being a teacher and a learner. But this was not an all self-induced. Knowledge of teachers and teaching are socially constructed not only in the context of school but in homes, communities, and through popular culture (Weber & Mitchell, 1995). A challenge exists not only for teachers but all stakeholders involved (children, families, other staff, administration, communities) in enacting the FoK framework. It pushes against the cumulative cultural narrative about roles, the appropriateness "dark" or of lifeworld practices and interests in school, and whose knowledge has value (Rodriguez, 2013; Zipin, 2009).

For this reason and other barriers, Sadie and Shelly used the classroom context as a way to identify children's FoK. They purposefully sought opportunities to ask family members about their home practices during more traditional notions of family involvement such as parent-teacher conferences. They both asked about children's abilities and skills that may not have been exhibited at school. Sadie and Shelly framed the conference with ethnographic methods by asking open-ended questions about the family's household practices. This reshaped the focus of the common practice of having families come to the school to discuss their child's development, behavior, and academic achievement. Through open-ended questioning, the conversation elicited otherwise withheld information about the child's FoK. Sadie and Shelly experienced a mixture of responses from families noting that the mutual trust or *confianza* was vital to gaining insight into their home practices no matter the context.

Classroom observations also served as a way to support the identification of children's FoK. Shelly observed her focal child, Donte, as having interest in rolling dice and path (board) games at school. When she conducted the ethnographic home visit, she observed an interest in playing similar games at home. This familiarity between contexts helped (as she said) "make it

easier" for him to mediate his FoK since it was present in both contexts. Shelly was able to make the academic connection between a family cultural practice and that of school. Due to its "appropriateness", game playing was a FoK that simply 'fit into' the curriculum (Zipin, 2009).

Once teachers have identified children's FoK, how, then, do they use this understanding of lifeworld cultural practice to design learning experiences? It has been posited that the purposeful design of learning activities based on children's FoK can support student learning (González, et al., 2005). These intentional learning experiences use the child or families' cultural expertise, experiences, or interests as the foundation. Throughout the process observed for this study, Sadie and Shelly valued the debriefing study group sessions to discuss their experiences on the ethnographic home visits and what they know about their students. Sadie and Shelly used their focal child's FoK as a basis of their action research projects to change an aspect of their practice.

What was interesting in this process was how they applied FoK. Sadie and Shelly mapped children's interest FoK *onto* a routine part of the day. Unlike the initial FoK study, they did not take this gained insight of cultural knowledge to design a new curricular unit[14]. Children's FoK were used as static or a bounded topic for the design of learning tasks during transition times that were intended to meet a variety of academic ability levels. Sadie and Shelly used their interest of playing games to create teacher-selected and directed activities rather than as an inquiry-based approach that allowed children to negotiate curriculum based on their needs and questions. In doing so, the child's FoK became nebulous in the new context of school. This is consistent with previous literature that suggests when FoK is 'brought into' the classroom that

[14] Teachers who completed the action research project for the 4KPD class were free to choose how to use the focal child's FoK. Individual teachers took it up differently depending on a variety of constraints and school requirements. As a facilitator of the projects, I supported the ways teachers made sense of FoK in their curricular context.

it loses the cultural basis and is transformed to have a more instructional focus (Civil, 2009; Nieto, 2012). FoK are then considered "appropriate" for school and to be the foundation for learning. Broadly, the transition games were instructionally "successful" in that children remained engaged, math conversations increased, and the gaming atmosphere allowed all students to share lifeworld knowledge and stories; all good things for an EC classroom. What fell to the wayside was the child's FoK. Sadie and Shelly, instead of the focal children themselves, positioned the bounded interest of gaming to be the foundational piece of the activity.

This is not to say that Sadie and Shelly were unsuccessful. They both were navigating multiple factors and constraints that lead them to this product. As a requirement for the 4KPD, they managed incorporating FoK and mathematics into their AR projects. Sadie and Shelly grappled with how to equalize the two and have both present in their research questions and plans. They also had individual constraints. Sadie juggled incorporating her focal child's FoK into the corporate designed curriculum. The academic achievement outcomes drive of Shelly's elementary school context shaped her approach to the AR project. She was much more focused on Donte's math skills and differentiation to ensure all of her students would be able to participate in the learning activities. This is consistent with previous literature that suggests that though educators agree there is a need for culturally responsive teaching, well intentioned learning experiences tend to be more academically focused learning than build from children's cultural experiences (Villegas & Lucas, 2002).

A growing body of literature suggests that empowering students to mediate their own FoK between home and school contexts can help scaffold their learning (Barton & Tan, 2009; Moje, et al., 2004). Commonly in scholarship this has occurred in elementary and secondary level classrooms. Some EC teachers may be hesitant to attempt this type of child inquiry-driven

approach to FoK because the framework challenges the dominant discourse and thematic structures of ECE. However, my analysis supports the idea that teachers with a sociocultural perspective can make this happen with young children. Sadie's use of show-and-tell allowed children to use self (or family) selected cultural artifacts to represent the thematic unit or letter of the week. Regardless of the academic connection, the show-and-tell time was an opportunity for children to mediate cultural knowledge into the classroom and for the teacher to facilitate the questioning to provoke more information about the child's FoK. When this traditional ECE practice of show-and-tell is instructed with the intention to tease out children' lifeworld experiences and expertise, it has the capacity to promote children's to use their own FoK to *co-construct* new knowledge.

Shelly tended to encourage her students to share information about their cultural practices and knowledge through verbal interactions, commonly during whole group times and play. This is not to say that it did not occur at other times during the class session; however, the focus of transition times, meals, and small groups leaned towards subject knowledge (literacy, math, science) based. Children in Shelly's classroom tended to share lifeworld connections to the content from which Shelly would respond by posing more questions. In Wayne's vacation example, he made a connection when looking at the map and Shelly extended this through prompting questions and by adding a globe to extend the students' co-construction of knowledge.

A first step for teachers such as Sadie and Shelly to assist children to mediate their own FoK is to acknowledge the cultural practices that are present in the school context. Teachers can look directly at the classroom space to see that the historical practices and daily routines influence children's cognitive development and cultural knowledge. Shelly's bathrooming example pointed to her understanding that there are practices that are unique to EC classrooms.

Sadie spoke of Clara's FoK possibly stemming from years of being enrolled in child care; that the culture of that setting has shaped Clara's cultural knowledge. Though each context and space has its own cultural practices they do overlap which was present in this study. Children made the connection between verbal interactions with other peers and adults in the classroom space to their lifeworld knowledge from cultural experiences and practices.

This work provides insights of theoretical importance to the literature of FoK. That Sadie and Shelly's conceptualization of FoK was informed by and informed their personal and professional knowledge and contexts was evident. Both preK teachers drew from a sociocultural perspective to identify and make sense of children's FoK during ethnographic home visits and designing learning activities. The intentional learning experiences created in the EC space were based mainly on children's interest FoK. However, when children mediated their own FoK it tended to reflect social and cultural experiences and expertise. In play-based interactions with children, Sadie and Shelly made decisions that drew from their multifaceted pedagogical content knowledge. Both EC theory and development along with subject content were instrumental to their improvisational reactions to the children's mediated FoK in play.

Young children mediating their own FoK is a powerful resource in the EC classroom because they are voluntarily offering insights, experiences, and interests from their social and cultural lifeworlds. It can be present in all aspects of the day, such as play, whole group time or meals. What this adds to the FoK literature is that in doing so, young children do not identify or label their lifeworld resources and knowledge as a 'fund' or as 'culture'. They are incorporating their experiences and interests naturally into play and the classroom space in an authentic way. It is vital for the teacher to recognize this and uncover the child's connection between the school context and the lifeworld connection.

The silent actor in empowering young children to transmit their own FoK was the classroom context. Sadie and Shelly designed the physical space of the classroom to encourage social interactions and learning. They also co-constructed a class culture that fostered children's sharing of their FoK with other children and adults that goes beyond merely selecting materials a layout intended to support social learning (Lambert & Cylde, 2000). Because this space existed, children naturally integrated their cultural experiences, interests, and expertise into their play. Most notably, the children in Sadie's classroom innovatively created the cultural place, McDonald's, in the block area. Through this play scenario the children demonstrated their understanding of the restaurant: the roles of employees and patrons, the commercial jingle, the cultural materials, the transactions, and the fast-paced nature of the eatery. Unlike a conventional approach to child-directed, popular culture scenarios in play, Sadie did not inundate the play with academic content. A discussion about money and the role of a 'manager' occurred, thought the play stayed alive over months as she participated in the cultural experience by ordering McDonald's specific foods and using vocabulary heard in that real-life space. Similarly, when her class made dirt cake, she and Owen connected over the TV show Cake Boss.

EC teachers may struggle with the idea of allowing play that is FoK rich yet is not directly connected to the thematic unit or have apparent academic content. Both teachers took a sociocultural approach in the classroom. This rejects the typical learning situations where skills are transmitted from adults to children and students are perceived as passive learners who sit quietly and reproduce information. Rather, it focuses on the construction of authentic spaces where children can try and manipulate ideas as they make sense of the world (Moll and Whitmore, 1993). Children in these spaces are active in their own academic and cultural development and learned content through various social relationships facilitated by the teacher.

The role of the teacher is to co-construct and mediate this space to foster child control to eventually do so independent of their assistance. This is especially true for teachers situated in an academically driven climate of schooling culture. González and her colleagues (2005) recognized that the emancipatory FoK approach contends with the push for standardization and can actually isolate teachers.

Practitioners may find themselves in the crux of an incredible dilemma: how to enact FoK in the current context of ECE. As Sadie reflected about McDonald's and Dunkin Donuts, stepping away from the thematic unit to incorporate little instances of FoK work in EC classrooms. Deliberately and explicitly using children's FoK as a springboard lessens the need for children to have to work so hard to re-contextualize the information being learned at school. It can help them to make connections between the home cultural knowledge and the school knowledge, thus supporting the acquisition of school knowledge, without delegitimizing their home cultural resources. This could potentially lead to a stronger association between the student and school.

In the following section, I present implications of the FoK framework and suggestions for supporting teachers' practices in using this approach in ECE.

6.2 Implications

Researchers continue to recommend honoring and incorporating children's cultural resources and knowledge in learning tasks (Li, 2013). Furthermore, teachers continue to seek ways to view children from an asset-based perspective, bridge connections between home and school, and integrate children's FoK into curriculum. This is beautifully idealistic and remains quite a challenge. With the growth of universal preK programs and growing diversity of student populations, many teachers acknowledge the importance of addressing individual needs of young

children yet face a variety of barriers. These range from the tactile barriers of limited access to technology or assistants to the abstract of cultural biases and differences of expectations and everything in between.

Researchers suggest that the FoK framework can help to breakdown some of the barriers between teachers and families (Vèlez-Ibáñez & Greenberg, 1992) and is a useful way to know children as multi-faceted and possessing rich resources (Moll, et al., 1992). At times unintentional, teachers' interpret that the absence of families in schools is equivalent to not caring or being uninvolved is a common misconception. An often expressed misconception about children from language and race minority and/or low resource homes is that the families 'don't care'. FoK serves as a tool to rethink family involvement by positioning the teacher as a research in home. Through observing daily household functioning and discussing the families' social and cultural practices, the teacher is able reframe their thinking of what it means for families to 'care' or be 'involved' in their child's education.

To do so, teachers can recognize the importance of building mutual trust with families. Teacher education and PD programs should support teachers as they make sense of cultural practices that differ from their own and how to families may, at first, be territorial of their privacy. Pre- and in-service teachers using the FoK framework must embrace the differences in displays or expectation of caring for a child's learning and development. Though challenging, this discomfort helps teachers understand the cultural factors that inform and are informed by these differences. Boylorn (2014) described her life in a small, black community as experiencing moments of isolation as well as isolating others. "To be invisible was preferable. Invisibility meant hegemony, which translated, in our community to harmony. Difference was strictly disciplined" (p. 314). Familiarity was as much a comfort as it was segregation. While this was

unique to this particular context, this perspective on difference theory can be applied to the concept of the teacher and family relationship. This familiarity carries power and access to personal histories and cultural ways of knowing that may be concealed at the beginning of constructing a relationship. In this process of building a mutual trust with families, teachers require support as they grapple with reframing their thinking.

To debrief with study groups or a learning community is imperative for recognizing personal biases and misunderstandings (Moll, 2014). No developmental trajectory exists for learning about the FoK framework. It requires individual and collaborative reflection, self-identification, trial and error in the classroom, and a willingness to be open-minded and flexible.

Creating a change in how this gained cultural information about students is used to inform pedagogy and design learning activities is a challenge (Lewis, Perry, Friedkin, & Roth, 2012). Deeply rooted, traditional EC practices emphasis children's development and skills. This pedagogical knowledge continues to be key for EC educators though in addition, a rich understanding of children's cultural experiences and deep content knowledge are equivalently important for extending children's knowledge (Cullen, 1999; Graue, Whyte & Delaney, 2014). This study draws attention to the importance of teachers and children mediating student FoK into learning activities at school and demonstrates that a lack of emphasis on cultural knowledge and resources can no longer be 'accepted', or 'justified' in ECE. Recent literature emphasizes the need for teachers to design learning experiences that honor and respond to children's cultural resources and knowledge outside of school (Souto-Manning, 2013).

Teachers also require support in enacting the FoK framework in standards driven and outcome based contexts. With more preK programs being adopted by school districts, it brings with it high stakes accountability. Generally, districts tend to seek curriculum that has

immediate results in student test scores. For some, the FoK framework may not appear to support this agenda. Teachers need support in understanding that in a hybrid space that welcomes their lifeworld knowledge and empowers them to use it in the school context to socially construct new knowledge has incredible effects on the learning. Teacher education and PD programs need to emphasize this and other ways to incorporate and honor children's cultural ways of knowing into school activities. It is important to help teachers understand the rich impact of heuristic development, learning something first hand about their students, can have on their pedagogy. Adopting ethnographic methods to understand students' and families' lifeworlds is key to reshaping deficit perspectives.

6.3 Recommendations for future research

Ideas for future research developed throughout the data collection and analysis process. The examples in this study reveal how multiple-part relationships within multiple contexts in a child's life has potential to influence learning and development. What follows are suggestions for future research that will continue to advance the understanding and enactment of FoK.

This research represents how two preK teachers enact the FoK framework as a means of fostering relationships with families of young children and enhancing learning experiences in the classroom. A cornerstone for learning in both classrooms was play, which remains foundational in ECE as an effective way for children to socially construct knowledge with others and adults. Due to the complexity and fast paced nature of play, teachers make instantaneous pedagogical decisions to support children's developmental potential (Graue, Karabon, & Whyte, 2015). Therefore, additional research is necessary to truly understand their spontaneous choices to connect children's FoK into activities and routines. A study that included reflective interviews or written and oral reflection following instruction would allow access to the momentary

decision making process (Loughran, 2002). This research would be twofold. It would provide the researcher insight into the teachers' thinking and also would have potential to influence practice. A research study of this nature would also benefit from examining how connections to children's FoK were purposefully avoided and/or unintentionally unseen. What influences teachers' decisions to include or ignore particular FoK? How do teachers determine what is "appropriate" FoK for the classroom context? Further, how do young children react to this uptake or rejection of their FoK?

Thematic units also remain a mainstay in ECE classrooms. Teachers of young children use this approach to incorporate academic, social, and cultural resources into learning. Having spent two consecutive years working with Sadie and Shelly, I witnessed that the sequential nature of their thematic units repeated year after year. For example, both classrooms studied plants and insects during spring months both the first year and the second. Understanding that Sadie worked under corporate constraints and Shelly experienced district-mandated policies and practices, I often wondered about the potential impact of FoK on broader curriculum planning. How might EC teachers design inquiry-based units based on cultural resources and expert knowledge of the children in their classrooms?

Coincidentally, I have had follow up with both Sadie and Shelly following data collection for this study. Through personal communications and an end of 4KPD program interview, we have discussed how FoK continues to influence their curricular and pedagogical decisions. Both teachers continue to use their action research math games during transition times. While this is an extension of the culminating project that was based on their focal child's FoK, I am curious how these learning tasks reflect their current students' FoK. Follow-up classroom observations and interviews to determine how they have taken FoK in their work in subsequent years would

further literature to explore impact over time. Future research should also examine how the conceptualization of FoK shifts over time based on experiences, constraints, and relationships with families.

Generally, the concept of FoK has been used to study students and teachers. Often overlooked in the classroom is the role of the educational assistant. While the job descriptions are context dependent, commonly in the prototypical ECE classroom, the assistant helps children one-on-one, supports with classroom transitions (cleaning and prepping materials), and engages with children during play. They are vital to ensuring smoothness throughout the day and can be seen as an extension of the teacher. Examples in this study did not directly highlight the work of Sylvia and Marnie yet their presence was imperative for the classrooms to function.

The focus of this study was to understand how teachers understood and enacted FoK yet I was constantly questioning the role of the educational assistants in the implementation of this framework. I repeatedly observed Sadie and Shelly's assistants sitting on the carpet with children in their laps and whispering into their ears, talking with family members when the teacher was busy, and redirecting behavior by making social and cultural connections to children's lives outside of school. In particular, I learned that Sadie's assistant, Sylvia, lived in the Oakcrest neighborhood where majority of the students also lived. I often wondered about how this affected her ability to draw cultural connections with the students. Monó and Rueda (2003) examined how the multiple sociocultural contexts of a Mexican immigrant paraeducator impacted her teaching practices as an educational assistant. They found that due to her background and experiences living in the same community as the students, this paraeducator used her FoK to bound and interact with students. By drawing on similar experiences, such as learning English as a second language, these FoK could prove especially important in teaching

students form similar non-dominant backgrounds. Studying the role of educational assistants and FoK is necessary to understand their potential to advance student development by making cultural connections with their lifeworlds.

Families play a significant role in FoK research. Families and society provide legitimate, indirect cultural influence to classroom learning. During my time colleting, analyzing, and writing around this data I often questioned how families perceived and understood the FoK framework. The focus of this current study centers on teachers' conceptualizations yet I was constantly struck with the desire to know what the families thought of the ethnographic home visits and the incorporation of their experiences and expertise into the school context. Much of the FoK literature presents families perspectives from the interpretation of the teacher and how the *confianza* was important for building a reciprocal relationship. But how do families make sense of the framework and what is their experience in the process?

Most importantly and widely overlooked in FoK research is the child's experience. The cultural practices for children may differ from that of adults and other siblings in the household (Esteban-Guitart & Moll, 2014). Literature investigating the FoK framework would benefit from insights the child's involvement in the ethnographic home visits and learning activities based on their cultural knowledge. Limited research exists that uses older elementary through high school children examining their own FoK and consciously using it to inform curriculum at school (Andrews & Yee, 2006). Doing this type of research with young children may be more of a challenge, yet it is completely possible. Additionally, the notion of children mediating their own FoK is important to examine further. To understand how children make sense of their social and cultural ways of knowing, interests, and artifacts, we must begin to consider children's

perceptions and desires. Exploring the child's role at home from their perspective would offer a view into *their* FoK in addition to the families.

6.4 Conclusion

"As Vygotsky would have certainly acknowledged, teachers change themselves in the process of helping to mobilize funds of knowledge for teaching and learning and working with others to help change classrooms for the better" (Moll, 2014, p. 154).

This research was as much about Sadie and Shelly's conceptualization of FoK as it was mine. This dissertation stemmed from my masters thesis work on FoK and kindergarten readiness. In that paper I was interested in exploring what children bring into schooling and whether or how kindergarten screeners identified it. As a former kindergarten teacher, I used the FoK framework to consider the cultural resources and knowledge that my students inherently possessed and shaped their learning and development. Beginning my doctoral studies having studied and utilized the framework, I felt I had a decent grasp on what FoK was. I find now that I had only scratched the surface of uncovering my understanding.

I had the opportunity to work on a research project that used the FoK framework in their PD. Through project meetings, I was able to see how these various team members individually constructed understandings of the framework and how it could be taken up into practice. Further, in the 4KPD, I had a great opportunity to meet a group of preK teachers who also challenged me to think differently about FoK. The way that each of them took up and understood the framework and approach challenged me to unpack my previously constructed ideas of FoK. Through the process, I realized that I brought a very practitioner frame of FoK that focused more on the five components of the approach- study groups, community observations, ethnographic

home visits, reflection, and curriculum design. Being a researcher and facilitator for the 4KPD, it challenged me to think deeper about the theoretical frameworks underpinning FoK and delve into the history of how it came to be.

Through my work on the 4KPD project, I had the tremendous opportunity to go into classrooms to observe for both the CLASS quality rating scale system and also to collect data of mathematics in play. When I was in the classrooms there were many moments when I as an outsider would identify something the children were offering as FoK. Also, I saw teachers identifying and building on it. I was curious about how teachers use the classroom to identify, make sense of, and incorporate children's FoK? In the traditional FoK study, the focus was on ethnographic home visits. While the Sadie and Shelly did conduct these visits with their focal children and their families, there were many more children in their classrooms (generally about 16) that they did not have the chance to do this with. I was curious to examine: How can teachers use the classroom to understand children's cultural resources and knowledge? How can they build relationships with young children? What tools do they use to help them enact FoK?

Just as Sadie and Shelly's understanding of the FoK framework developed over time, I too redefined my thinking of how to use cultural knowledge and resources to organize learning. My scope of what knowledge is considered *valuable* has widened and that the complex and messy ways of socially constructing meaning extends much farther than the walls of a classroom. Maybe the most unexpected thing I've gotten out of this work was the opportunity to inspire and encourage teachers in their pursuit of understanding FoK. This process wasn't always easy or smooth. There were many times that I questioned 'what [is] the FoK?' or thought 'FoK [is] this'. I hope that you, the reader walk away with an expanded understanding of the framework and see the power it has on teachers' pedagogical decisions for young children.

References

Abreu, G. de (1995). Understanding how children experience the relationship between home and school mathematics. *Mind, Culture, and Activity, 2*(2), 119-142.

Adair, J. K. (2011). Confirming Chanclas: What early childhood teacher educators can learn from immigrant preschool teachers. *Journal of Early Childhood Teacher Education, 32*(1), 55-71.

Andrews, J. & Yee, W. C. (2006). Children's 'funds of knowledge' and their real life activities: Two minority ethnic children learning in out-of-school contexts in the UK. *Educational Review, 58*(4), 435-449.

Andrews, J., Yee, W. C., Greenhough, P., Hughes, M., & Winter, J. (2005) Teachers' funds of knowledge and the teaching and learning of mathematics in multi-ethnic primary schools: Two teachers' views of linking home and school. *ZDM: The International Journal of Mathematics Education, 37*(2), 72-80.

Anyon, J. (1980). Social class and the hidden curriculum of work. *Journal of Education,* 162(1), 67-92.

Baker, D. A., Street, B. V., & Tomlin, A. (2003) Maths as social: Understanding relationships between home and school numeracy practices. *For the Learning of Mathematics, 23*(3), 11-15.

Banks, J.A. & McGee Banks, C.A. (Eds.). (2001) *Handbook of research on multicultural education* (2nd ed.). San Francisco: Jossey-Bass.

Barnett, W.S., Carolan, M.E., Squires, J.H., & Clarke Brown, K. (2013). *The state of preschool 2013: State preschool yearbook*. New Brunswick, NJ: National Institute for Early Education Research.

Barton, A.. & Tan, E. (2009). Funds of knowledge and discourses and hybrid space. *Journal of Research in Science Teaching, 46*(1), 50-83.

Bazeley, P., & Jackson, K. (2013). *Qualitative data analysis with NVivo* (2nd ed.). Thousand Oaks, CA: Sage.

Belfield, C. R. & Winters, D. K. (2004). An Economic Analysis of Four-Year-Old Kindergarten in Wisconsin. Research paper, PEW PrekNow, Trust for Early Education.

Bodrova, E. & Leong, D.J. (1996). *Tools of the mind: The Vygotskian approach to early childhood education (2nd Ed.)*. Boston, MA: Pearson.

Bone, J., Cullen, J., & Loveridge, J. (2007). Everyday spirituality: An aspect of the holistic curriculum in action. *Contemporary Issues in Early Childhood, 8*(4), 344-354.

Borofsky, R., Barth, F., Shweder, R., Rodseth, L. & Stolzenberg, N.M. (2001). WHEN: A conversation about culture. *American Anthropologist, 103*(2), 432-446.

Bourdieu, P. (1986). The forms of capital. In J.G. Richardson (Ed.). *Handbook of theory and research of the sociology of education.* New York: Greenwood Press.

Bowman, B, Donovan, S., & Burns, M.S. (Eds.). (2000). *Eager to learn: Educating our preschoolers*. Washington, DC: National Academies Press.

Boylorn, R.M. (2014). From here to there: How to use auto-ethnography to bridge difference. *International Review of Qualitative Research, 7*(3), 312-326.

Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in

pre-kindergarten programs. *Early Childhood Research Quarterly, 25*(2), 166-176.

Cannella, G.S. (1997). *Deconstructing early childhood education: Social justice & revolution.* New York: Peter Lang.

Carr, M. and Lee, W. 2012. *Learning Stories: Constructing Learner Identities in Early Education*. London, UK. SAGE.

Castle, K. (2012). *Early Childhood Teacher Research: From Questions to Results.* New York, NY: Routledge.

Children's Defense Fund. (2014). *The State of America's Children.* www.childrensdefense.org

Civil, M. (2007). Building on community knowledge: An avenue to equity in mathematics education. In N. Nasir & P. Cobb (Eds.). *Improving access to mathematics: Diversity and equity in the classroom*. (pp. 105–117) New York, NY: Teachers College Press.

Copley, J. V., Jones, C., Dighe, J. (2010). *The Creative Curriculum for Preschool: Mathematics*. Washington D.C.: Teaching Strategies.

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

Creswell, J. (2009). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage.

Dahlberg, G., Moss, P., Pence, A. (2007). *Beyond quality in early childhood education and care: Postmodern perspectives* (2rd ed.). New York: Routledge.

Delpit, L. (1995). *Other people's children: Cultural conflict in the classroom*. New York: The New Press.

Denzin, N.K. & Lincoln, Y.S. (2003). The discipline and pracice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials 2nd Ed.* (pp. 1-45). Thousand Oaks, CA: Sage.

Dimitriadis, G., & Kamberelis, G. (2006). *Theory for education*. New York: Routledge.

Duncan, J., Bowden, C. & Smith, A. (2006). A gossip or a good yack?: Reconceptualizing parent support in New Zealand Early Childhood Centre Based Programmes, *International Journal of Early Years Education, 14*(1), 1-13.

Dyson, A.H. & Genishi, C. (2005). *On the case: Approaches to language and literacy research*. New York, NY: Teachers College Press.

Early, D., Barbarin, O., Bryant, B., Burchinal, M., Chang, F., Clifford, R., et al. (2005). Pre-kindergarten in eleven states: NCEDL's multi-state study of pre-kindergarten and state-wide early educational programs (SWEEP) study. Retrieved September 30, 2005, from www.fpg.unc.edu/~ncedl/pdfs/SWEEP MS summary final.pdf.

Edwards, S. (2003). New Directions: Charting the paths for the role of sociocultural theory in early childhood education and curriculum. *Contemporary Issues in Early Chidhood, 4*(3), 251-266.

Eisenhart, M., & Howe, K. (1992). Validity in education research. In J.P.M. LeCompte, W. Millroy, J. Preissle (Eds.), *The handbook of qualitative research in education* (2nd ed.) (pp. 642-680). San Diego, CA: Academic Press.

Emerson, R., Fretz, R. & Shaw, L. (2010). *Writing Ethnographic Fieldnotes* (2nd ed.). University of Chicago Press.

Engestrom, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work, 14*(1), 133- 156.

Esteban-Guitart, M. & Moll, L.C. (2014). Funds of Identity: A new concept based on the Funds of Knowledge approach. *Culture & Psychology, 20*(1) 31-48.

File, N. (1995). Applications of Vygotskian theory to early childhood education: Moving toward a new teaching-learning paradigm. *Advances in Early Education and Day Care, 8,* 295-317.

Foley, D. (2002). Critical ethnography: The reflexive turn. *Qualitative Studies in Education, 15*(5), 469-490.

Foote, M.Q. (2009). Stepping out of the classroom: Building teacher knowledge for developing classroom practice. *Teacher Education Quarterly, Summer*, 39-53.

Freeman, M., deMarrais, K., Preissle, J., Roulston, K., & St. Pierre, E. (2007). Standards of evidence in qualitative research: An incitement to discourse. *Educational Researcher, 36*(1), 25-32.

Freire, P. (1993). *Pedagogy of the oppressed.* New York, NY: Continuum. (Original work published 1970).

Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.

Genishi, C. & Dyson, A.H. (2009). *Children, language, and literacy: Diverse learners in diverse times.* New York: Routledge.

Gillanders, C, Iruka, I., Ritchie, S., & Cobb, C.T. (2012). Restructuring and aligning early education opportunities for cultural, language, and ethnic minority children. In R.C. Pianta, W.S. Barnett, L.M. Justice, & S.M. Sheridan (Eds.). *Handbook of early childhood education* (pp. 111-136). New York: The Guilford Press.

Ginsberg, M. (2007) Lessons at the kitchen table. *Educational Leadership,* March.

Glesne, C. (2011). *Becoming qualitative researchers: An introduction (*4th ed.). Boston, MA: Pearson Education.

González, N. (2005). Beyond culture: The hybridity of funds of knowledge. In González, N., Moll, L., & Amanti, C. (Eds.), *Funds of Knowledge: Theorizing practices in households, communities, and classrooms* (pp.29-46). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

González, N., Moll, L., & Amanti, C. (2005). *Funds of Knowledge: Theorizing practices in households, communities, and classrooms.* Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

González, N., Moll, L., Tenery, M.F., Rivera, A., Rendòn, P., Gonzales, R., & Amanti, C. (2005). Funds of knowledge for teaching in Latino households. In González, N., Moll, L., & Amanti, C. (Eds.), *Funds of Knowledge: Theorizing practices in households, communities, and classrooms* (pp.29-46). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

González, N., Wyman, L., & O'Connor, B. (2011). The Past, Present and Future of "Funds of Knowledge" In Pollock, M., & Levinson, B., (Eds.) *A companion to the anthropology of education*. (pp. 481-494). Malden, MA: Wiley-Blackwell.

Gramsci, A. (1971). *Selections from the prison notebooks*. London: Lawrence & Wishart.

Graue, E. (2005). Theorizing and describing preservice teachers' images of families and schooling. *Teachers College Record, 107*(1), 157-185.

Graue, M.E. & Walsh, D.J. (1998). *Studying children in context: Theories, methods & ethics*. Thousand Oaks: Sage Publications.

Graue, M.E., Whyte, K.L., Delaney, K.K. (2014). Fostering culturally and developmentally responsive teaching through improvisational practice. *Journal of Early Childhood Teacher Education, 35*(4), 37-41.

Graue, M. E., Karabon, A.E., & Whyte, K.L. (2015). The power of improvisational teaching. *Journal of Teaching and Teacher Education, 48*, 13-21.

Graue, E., Karabon, A., Delaney, K., Whyte, K., Kim, J., & Wager, A. (2015). Imagining a future in preK: How professional identity shapes notions of early mathematics. *Anthropology & Education Quarterly, 46*(1), 37-54.

Gregory, A., Skiba, R.J., & Noguera, P.A. (2010). The achievement gap and the discipline gap two sides of the same coin. *Educational Research, 39*(1), 59-68.

Guba, E.G. and Lincoln, Y.S. (1994). Competing paradigms in qualitataive research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research 2nd Ed.* (pp. 105-117). Thousand Oaks, CA: Sage.

Gutiérrez, K.D., Baquedano-López, P., Tejeda, C. (1999). Rethinking diversity: Hybridity and hybrid language practices in the third space. *Mind, Culture, and Activity, 6*(4), 286-303.

Hammersley, M. (2005). The myth of research-based practice: The critical case of educational inquiry. *International Journal of Social Research Methodology, 8*(4), 317-330.

Hatch, J.A. (2011). Rethinking the relationship between learning and development: Teaching for learning in early childhood classrooms. *The Educational Forum, 74*(3), 258-268.

Heath, S.B. (1983). *Ways with words: Language, life, and work in communities and classrooms.* Cambridge, NY: Cambridge University Press.

Hedges, H. (2010) Blurring the boundaries: Connecting research, practice and professional learning. *Cambridge Journal of Education*, 40(3), 299-314.

Hedges, H. (2011). Rethinking Spongebob and Ninja Turtles: Popular culture as funds of knowledge for curriculum co-construction. *Australasian Journal of Early Childhood*, *36*(1), 25–29.

Hedges, H. (2012). Teachers' funds of knowledge: A challenge to evidence-based practice. *Teachers and Teaching, 18*(1), 7-24.

Hedges, H., & Cullen, J. (2005). Meaningful teaching and learning: Children and teachers' content knowledge. *ACEPapers, September* (16).

Hedges, H., Cullen, J., & Jordan, B. (2011). Early years curriculum: funds of knowledge as a conceptual framework for children's interests. *Journal of Curriculum Studies, 43*(2), 185-205.

Hensley, M. (2005). Empowering parents of multicultural backgrounds. In González, N., Moll, L., & Amanti, C. (Eds.), *Funds of knowledge: Theorizing practices in households, communities, and classrooms* (pp.29-46). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Hogg, L. (2011). Funds of knowledge: An investigation of coherence within the literature. *Teaching and Teacher Education, 27*, 666-677.

Hogg, L. (2011-2012). Funds of knowledge: An investigation of theoretical frameworks. *New Zealand Annual Review of Education, 21*(47-76).

Holland, D., Lachicotte, W., Skinner, D., & Cain, C. (1998). *Identity and agency in cultural worlds*. Cambridge, MA: Harvard University Press.

Horvat, E. M., Weininger, E.B., & Lareau, A. (2003). From social tries to social capital: Class

differences in the relations between schools and parent networks. *American Educational Research Journal, 40*(2), 319-351.

Kuh, L. (2012). Promoting communities of practice and parallel process in early childhood settings. *Journal of Early Childhood Teacher Education*, *33*, 19–37.

Kukla, A. (2000). Social constructivism and the philosophy of science. New York: Routledge.

Lambert, B. & Clyde, M. (2000). *Rethinking early childhood theory and practice.* Sydney, Australia: Social Science Press.

La Paro, K., Pianta, R., & Stuhlman, M. (2004). The Classroom Assessment Scoring System: Findings from the prekindergarten years. *The Elementary School Journal, 104*(5), 409-426.

Lareau, A. (2003). *Unequal childhoods: Class, race and family life*. Berkeley: University of California Press.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge: Cambridge University Press.

Lewis, C., Perry, R.R., Friedkin, S. & Roth, J.R. (2012). Improving teaching does improve teachers: Evidence from lesson study. *Journal of Teacher Education, 63*(5), 368-375.

Li, G. (2013). Promoting teachers of Culturally and Linguistically Diverse (CLD) students as change agents. *Theory into Practice, 52*(2), 136-143.

Lincoln, Y.S. and Guba, E.G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.

Lincoln, Y.S. and Guba, E.G. (2013). *The constructivist credo*. Walnut Creek, CA: Left Coast Press.

Lipka, J., Hogan, M., Webster, J.P., Yanez, E., Adams, B., Clark, S., and Lacy D. (2005). Math in a cultural context: Two case studies of a successful culturally based math project. *Anthropology and Education Quarterly (36)*4, 367-385.

Loughran, J. (2002). Understanding self-study of teacher education practices. In J. Loughran & T. Russell (Eds.), *Improving teacher education practices through self-study* (pp. 239-248). London: Routledge/Falmer.

Lubienski, S. (2003). Celebrating diversity and denying disparities: a critical assessment. *Educational Researcher, 32*, 30-38.

Marshall, E. & Toohey, K. (2010). Representing family: Community funds of knowledge, bilingualism, and multimodality. *Harvard Educational Review, 80*(2), 221-241.

Maxwell, J.A. (2004). *Qualitative research design: An interactive approach. (2nd Ed.)*. Thousand Oaks, CA: SAGE.

McLachlan, C., Fleer, M., & Edwards, S. (2010). *Early childhood curriculum: Planning, assessment, and implementation*. New York: Cambridge University Press.

Mead, M. (1928). *Coming of age in Samoa: A psychological study of primitive youth for western civilization*. New York: Morrow.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco: Jossey-Bass.

Miles, M. & Huberman, M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: SAGE.

Moje, E. B., Ciechanowski, K. M., Kramer, K., Ellis, L., Carrillo, R., & Collazo, T. (2004). Working toward a third space in content area literacy: An examination of everyday funds of knowledge and discourse. *Reading Research Quarterly*, 39(1), 38-70.

Moll, L. (2014) *L.S. Vygotsky and education.* New York: Routledge.

Moll, L., Amanti, C., Neff, D. & González, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory Into Practice XXXI*(2), 132-141.

National Association of the Education of Young Children (NAEYC) (2009). NAEYC position statement: Developmentally appropriate practice in early childhood programs serving children from birth through age 8. Retrieved June 13, 2014, from: http://208.118.177.216/about/positions/pdf/PSDAP.pdf.

National Center for Education Statistics (NCES) (2014). *The Condition of Education 2014* (NCES 2014-083). Washington, DC: U.S. Government Printing Office. Retrieved March, 29, 2015 from http://nces.ed.gov/pubsearch.

National Council for the Accreditation of Teacher Education (NCATE). (2005). *Professional standards for the accreditation of schools, departments and colleges of education*. Washington, DC.

National Research Council (2009). *Mathematics learning in early childhood: Paths toward excellence and equity*. C.T. Cross, T.A. Woods, and H. Schweingruber (Eds.). Washington: The National Academies Press.

Nieto, S. (2012). Honoring the lives of all children: Identity, culture, and language. In B. Falk (ed.) *Defending childhood: Keeping the promise of early education* (pp. 48-62). New York, NY: Teachers College Press.

Ortner, S. (2005). Subjectivity and cultural critique. *Anthropological Theory 5*(1), 31-52.

Oughton, H. (2010). Funds of knowledge-a conceptual critique. *Studies in the Education of Adult, 42*(1) 63- 78).

Palincsar, A.S. (1986). The role of dialogue in providing scaffolded instruction. *Educational psychologist, 21*(1&2), 73-98.

Paradise, R. & Rogoff, B. (2009). Side by side: Learning by observing and pitching in. *Journal of the Society for Psychological Anthropology, 37*(1), 102-138.

Patton, M.Q. (2002). Variety in qualitative inquiry: Theoretical orientations. In *Qualitative research & evaluation methods* (3rd ed., pp.75-137). Thousand Oaks: CA: Sage.

Perry, G., Henderson, B. & Meier, D. R. (2012). *Our Inquiry, Our Practice*. Washington D.C.: NAEYC.

Piaget, J. (1972). *The psychology of the child*. New York: Basic Books.

Pianta, R.C. & Hamre, B.K. (2009). Conceptualization, measurement, and improvement of classroom processes: Standardized observation can leverage capacity. *Educational Researcher 38*(2), 109-119.

Pillow, W. (2003). Confession, catharsis, or cure? Rethinking the uses of reflexivity as methodological power in qualitative research. *International Journal of Qualitative Studies in Education, 16*(2), 175-196.

Ready, D.D. & Wright, D.L. (2011). Accuracy and inaccuracy in teachers' perceptions of young children's cognitive abilities: The role of child background and classroom context. *American Educational Research Journal, 48*(2), 335-360.

Richards, L. (2009). *Handling qualitative data: A practical guide* (2nd ed.) London: Sage.

Richardson, L. & St. Pierre, E.A. (2008). Writing: A method of inquiry. In Denzin, N. & Lincoln, Y. (Eds.) *Collecting and interpreting qualitative materials* (3rd ed.) (pp. 923-948) Thousand Oaks, CA: SAGE.

Riojas-Cortez, M. (2001). Preschoolers' funds of knowledge displayed through sociodramatic play episodes in a bilingual classroom. *Early Childhood Education Journal, 29*(1), 35-40.

Rios-Aguilar, C., Kiyama, J.M., Gravitt, M. & Moll, L. (2011). Funds of knowledge for the poor and forms capital for the rich?: A capital approach to examining funds of knowledge. *Theory and Research in Education, 9*(2), 163-184.

Rodriguez, G.M. (2013). Power and agency in education: exploring the pedagogical dimensions of funds of knowledge. *Review of Research in Education, 37*(March), 87-120.

Rogoff, B. (2003). *The Cultural Nature of Human Development*. New York, NY: Oxford University Press.

Roulston, K. (2010). *Reflexive interviewing: A guide to theory and practice*. Los Angeles: Sage.

Ryan, S. & Grieshaber, S. (2005). Shifting from developmental to postmodern practices in early childhood teacher education. *Journal of Teacher Education*, 56*(1), 34-45.*

Saldana, J. (2013). *The coding manual for qualitative researchers*. Thousand Oaks, CA. SAGE Publications.

Sikes, P (2006). On dodgy ground? Problematics and ethics in educational research. *International Journal of Research & Method in Education, 29*(1), 105-117.

Sleeter, C.E. (2001). Preparing teachers for culturally diverse schools: Research and the overwhelming presence of White-ness. *Journal of Teacher Education, 52*(2), 94-106.

Sleeter, C.E. (2012). Confronting the marginalization of culturally responsive pedagogy. *Urban Education, 47*(3), 562-584.

Souto-Manning, M. (2013). *Multicultural teaching in the early childhood classroom.* New York: Teachers College Press.

Souto-Manning, M. & Mitchell, C.H. (2009). The role of action research in fostering culturally-responsive practices in a preschool classroom. *Early Childhood Education Journal, 37*, 269-277.

Spradley, J.P. (1979). *The ethnographic interview.* New York: Holt, Rinehart, and Winston.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Stake, R. E. (2006). *Multiple case study analysis.* New York: The Guilford Press.

Stanton-Salazar, R.D. (1997). A social capital framework for understanding the socialization of racial minority children and youths. *Harvard Educational Review, 67*(1), 1-40.

Steinberg, S. R. & Cannella, G.S. (Eds.) *Critical qualitative research reader*. New York: Peter Lang.

Sugarman, S. (2010). Seeing past the fences: finding funds of knowledge for ethical teaching. *The New Educator*, *6*, 96-117.

Tenery, M. F. (2005). La vista. In González, N., Moll, L., and Amanti, C. (Eds.), *Funds of knowledge: Theorizing practices in households, communities, and classrooms* (pp.29-46). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Thomas, G. (2011). A typology for the case study in social science following a review of definition, discourse, and structure. *Qualitative Inquiry, 17*(6), 511-521.

Tobin, J. (2007). An anthropologist's reflections on defining quality in education research. *International Journal of Research and Method in Education, 30*(3), 325-388.

Trede, F. & Higgs, J. (2009). Framing research questions and writing philosophically: The role of framing research questions. In J. Higgs, D. Horsfall, & S. Grace (Eds.), *Writing qualitative research on practice* (pp.13-25). Rotterdam: Sense.

United States Department of Education. (2013). *The condition of education.* Washington, DC:

U.S. Department of Education, Institute of Education Sciences, http://nces.ed.gov/programs/coe/.

Vèlez-Ibáñez, C. & Greenberg, J. (1992). Formation and transformation of funds of knowledge. *Anthropology and Education Quarterly,* 23(1), 313-335.

Vesay, J. (2008). Professional development opportunities for early childhood educators in community-based child care centers. *Journal of Early Childhood Teacher Education, 29*, 287–296.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Weber, S. & Mitchell, C. (1995). *"That's funny, you don't look like a teacher": Interrogating images and identity in popular culture*. London and Washington, DC: Falmer Press.

Wertsch, J.V. (1991). *Voices of the mind.* Cambridge, MA: Harvard University Press.

Whitmore, K.F. & Norton-Meier, L.A. (2008). Pearl and Ronda: Revaluing mothers' literature lives to imagine new relationships between homes and elementary schools. *Journal of Adolescent & Adult Literacy, 51*(6), 450-461.

Wiles, R., Charles, V., Crow, G., & Heath, S. (2006). Researching researchers: Lessons for research ethics. *Qualitative Research, 6*(3), 283-299.

Wolf, E. (1966). *Peasants*. Englewood Cliffs, NJ: Prentice-Hall.

Zigler, E., Gilliam, W.S., & Barnett, W.S. (2011). *The pre-K debates: Current controversies & issues.* Baltimore, MD: Paul H. Brooks Publishing Co.

Zipin, L. (2009). Dark funds of knowledge, deep funds of pedagogy: Exploring boundaries between lifeworlds and schools. *Discourse: Studies in the Cultural Politics of Education, 30*(3), 317-331.

Zipin, L., Sellar, S., Hattam, R. (2012). Countering and exceeding 'capital': A 'funds of knowledge' approach to re-imagining community. *Discourse: Studies in the Cultural Politics of Education, 33*(2),179-192.

Appendix A
List of Course Readings

Semester 1 Course Readings

- Amanti, C. (2005). Beyond a beads and feathers approach. In N. González, L. Moll & C. Amanti *Funds of knowledge: Theorizing practices in households, communities, and classrooms.* p. 119-130, Mahwah, NJ: Lawrence Erlbaum
- Balfanz, R. (1999). Why do we teach young children so little mathematics? Some historical considerations. In J. Copley *Mathematics in the Early Years.* pp. 3-10. National Council of Teachers of Mathematics.
- Bodrova, E. & Leong, D. (2003). Chopsticks and counting chips: Do play and foundational skills need to compete for the teacher's attention in the early childhood classroom? *Young Children on the Web*, Beyond the Journal: May.
- Carpenter, T. C. (2010). Counting. Working Paper.
- Copley, J. V., Jones, C., & Dighe, J. (2010). *The creative curriculum for preschool: Mathematics*. p. 441-449. Washington D.C.: Teaching Strategies.
- Frank, C. (1999). *Ethnographic eyes: A teacher's guide to classroom observation*. (pp.15-39) Portsmouth, NH: Heinemann.
- Ginsberg, M. (2007) Lessons at the kitchen table. *Educational Leadership,* March.
- Guberman, S. R. (2009). Cultural aspects of young children's mathematics knowledge. In J. Copley *Mathematics in the Early Years.* (pp. 30-36). National Council of Teachers of Mathematics.
- Hill, S. (2011). Learning Stories. Retrieved Sept. 13, 2011. www.unisanet.unisa.edu.au/staff/SueHill/**Learningstories**.pdf
- Moll, L., Amanti, C., Neff, D. & González, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory Into Practice XXXI*(2), 132-141.
- Mooney, C.G. (2000). Piaget In *Theories of childhood* (pp.59-79). St. Paul, MN: Redleaf Press
- Mooney, C.G. (2000). Vygotsky In *Theories of childhood* pp.82-95. St. Paul, MN: Redleaf Press
- Pianta, R. (2007). Preschool is school, sometimes. *Education Next,* Winter.
- Tenery, M. F. (2005). La vista. In González, N., Moll, L., and Amanti, C. (Eds.), *Funds of knowledge: Theorizing practices in households, communities, and classrooms* (pp.29-46). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Wien, C.A. 2004. From policing to participation: Overturning the rules and creating amiable classrooms. *Young Children, 59*(1): 34-40.
- Wolfe, J. (2000). John Dewey. *Learning from the past: Historical voices in early childhood education.* (pp.165-222). Mayerthorpe, Canada:Piney Branch Press.
- Wolfe, J. (2000). Lucy Sprague Mitchell. *Learning from the past: Historical voices in early childhood education*. (pp.351-390). Mayerthorpe, Canada:Piney Branch Press.
- Wolfe, J. (2000). Maria Montessori. *Learning from the past: Historical voices in early childhood education*. (pp. 225-247). Mayerthorpe, Canada:Piney Branch Press.

Semester 2 Course Readings

- Colker, L.J. (2010). Teaching young children to think optimistically. *Teaching Young Children.*
- Copley, J. V., Jones, C. & Dighe, J. (2010). *The Creative Curriculum for preschool: Mathematics.* p. 469-472, 448, 457, 463-464. Washington, DC: Teaching Strategies.
- Curtis, D. & Carter, M. (2003). Enhancing children's use of the environment. In Designs for living & learning. *Transforming early childhood environments*. p. 178-189 St. Paul: Redleaf Press.
- Dale, B. Ryder, E. Strong, L. Houssart, J. (2009) 'Listen, it's easy: Children as teachers of counting. In. J. Houssart & J. Mason (Eds.) *Listening counts. Listening to young learners of mathematics.* (p. 127-142) Stoke-on-Trent: Trentham Books.
- Dombro, A.L., Jablon, J., Stetson, C. (2011). Powerful interactions: First look. In *Powerful interactions: How to connect with children to extend their learning*. p. 1-10. Washington, DC: NAEYC.
- Espinosa, L (2010). Research findings and recommendations for children living in poverty. *Getting it right for young children from diverse backgrounds: Applying research to improve practice.* Washington D.C.: NAEYC.
- Espinosa, L (2010). Research on the development, learning, and teaching of young ELL's. *Getting it right for young children from diverse backgrounds: Applying research to improve practice.* Washington D.C.: NAEYC.
- Grant, K.B. & Ray, J.A. (2010). Preparing for family events. In K.B. Grant & J.A. Ray. *Home, school, and community collaboration. Culturally responsive family involvement.* (p. 317-344) Los Angeles, CA: Sage Publications.
- Graue, E. (2008). Teaching and learning in a post-DAP world. *Early Education & Development, 19*(3), 441–447. Routledge. doi:10.1080/10409280802065411
- Graue, M. E., & Oen, D. (2008). You just feed them with a long-handled spoon: Families evaluate their experiences in a class size reduction reform. *Educational Policy, 23*(5), 685-713.
- Griffiths, R. (2007). Young children counting at home. *Mathematics Teaching Incorporating Micromath, 203* (July). p. 24-26.
- Jones, N.P. (2008). Grouping children to promote social and emotional development. *Young children*. p. 34-39.
- Jones, E. & Reynolds, G. (2011). *The play's the thing: Teachers roles in children's play.* 2nd edition. Chapters 4 & 5 (pp. 34-56) New York: TC Press.
- Koralek, D. (2010). Adapt the environment to meet differing emotional needs. *Teaching Young Children 4*(2).
- Long, S., & Volk, D. (2010). Networks of support. Learning from the other teachers in children's lives. *Home-school connections in a multicultural society* (pp. 177-200). New York: Routledge.
- Moomaw, S. (2006). Math Begins in Preschool: Talking the Language of Math Retrieved from: http://rec.ohiorc.org/orc_documents/orc/recv2/briefs/pdf/0004.pdf
- Moomaw, S. (2011). Integrating curricula to mathematics goals: Putting it all together. *Teaching Mathematics in Early Childhood*. p. 163-190. Baltimore, MD: Paul H. Brooks.
- Pica, R. (2011). Helping children cooperate. Young children. p. 60-61.

- Pound, L. (2008). Looking for patterns. *Thinking and Learning about Mathematics in the Early Years.* p. 31-39. New York, NY: Routledge.
- Pound, L. (2008). Playing maths. *Thinking and Learning About Mathematics in the Early Years.* p. 40-54. London: Routlege.
- Seitz, H. (2008). The power of documentation in the early childhood classroom. *Young Children*. P. 88-93.
- Soundy, C.S. & Stout, N.L. (2002). Pillow talk. Fostering the emotional and language needs of young learners. *Young Children,* March, 20-24.
- Tharp, R. & Eritz, S. (2011). From high chair to high school: Research-based principles for teaching complex thinking. In C. Copple. *Growing minds. Building strong cognitive foundations in early childhood*. p. 131-136. Washington: NAEYC.
- Tucker, K. (2010). Mathematics Through Play in the Early Years.
- Wager, A. (2011). Equitable mathematics pedagogy in preK. Working Paper
- Whitechurch, S, & Sprague, J. (2012). The problem solver job. Peer-mediated conflict resolution. In *Teaching Young Children 5*(2), 8-9.

Semester 3 Course Readings

- Baker, D., Street, B. & Tomlin, A. (2003) Mathematics as social: Understanding relationships between home and school numeracy. *For the Learning of Mathematics, 23*(3), 11-15.
- Brown, C. S., Sarama, J., & Clements, D. H. (2007). Thinking about learning trajectories in preschool. *Teaching Children Mathematics, 14*(3), 178-181.
- Burton, M. & Baum, A. C. (2009). Engaging families in meaningful mathematics. *Teaching Children Mathematics, 16*(1), 12-19.
- Carpenter, T. C. (2012). Cognitively Guided Instruction in PreK. Working Paper.
- Clements, D. & Sarama, J. (2000). Young children's ideas about shape. *Teaching Children Mathematics, Apr.* 482-488.
- Clements, D. & Sarama, J. (2002). Mathematics curricula in early childhood. *Teaching Children Mathematics, Nov.* 63-166.
- Cook, C. D. (2008). I scream, you scream: Data analysis with kindergartners. *Teaching Children Mathematics, 14*(9), 538-540.
- Copley, J., Glass, K., Nix, L., Faseler, A., De Jesus, M., & Tanksley, S. (2004). Measuring experiences for young children. *Teaching Children Mathematics, 10*(6), 314-319.
- Copley, J., Johes, C., & Doghe, J. (2010). *The Creative Curriculum for preschool: Mathematics.* Washington, DC: Teaching Strategies.
- D'Ambrosio, U. (2001). What is ethnomathematics and how can it help children in schools? *Teaching Children Mathematics, 7(6), 308-310.*
- Hansen, L. E. (2005). ABCs of early mathematics experiences. *Teaching Children Mathematics, November,* 208-212.
- Hatt, B. (2012). Smartness as a cultural practice in schools. *American Educational Research Journal, 49*(3), 438-460.
- Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. *Theory Into Practice, 34*(3), 159-165.

- Nieto, S. (2012). Honoring the lives of all children: Identity, culture, and language. In B. Falk (ed.) *Defending Childhood: Keeping the Promise of Early Education* (pp. 48-62). New York, NY: Teachers College Press.
- Segura-Mora, A. (2008). What color is beautiful? In A. Pelo (ed.) *Rethinking Early Childhood Education* (pp. 3-6). Milwaukee, WI: Rethinking Schools.
- Tenorio, R. (2008). Raising issues of race with young children. In A. Pelo (ed.) *Rethinking Early Childhood Education* (pp. 17-22). Milwaukee, WI: Rethinking Schools.
- Wager, A. (2013). Practices that support mathematics learning in play-based classrooms. In L. English & J.T. Mulligan (Eds.) *Reconceptualizing early mathematics learning advances in mathematics education.* (pp. 163-181). Netherlands: Springer.
- Whitin, P. & Whitin, D. J. (2011). Mathematical pattern hunters. *Young Children, 66*(3), p.84-90.

Semester 4 Course Readings

- Castle, K. (2012). *Early childhood teacher research: From questions to results.* New York, NY: Routledge.
- Hubbard, R. S. & Power, B. M. (1999). *Living the question: A guide for teacher researchers.* York, ME: Steinhouse Publishers.
- MacNaughton, G. & Hughes, P. (2008). *Doing action research in early childhood: A step by step guide.* New York, NY: McGraw-Hill.

Appendix B
Examples of Family Interview Questions

1. Tell me about what your child likes.

2. Where do you see your child at in the end of a school year?
    - Goals?

3. How long have you lived in Madison?
    - Did you have family here?
    - Tell me how you got from _____to the USA?
    - What brought you here?
    - Where do you see your child being (location-wise) as they get older?
    - Born→ Raised?
    - If not, what brought you here?

4. Tell me about what a day looks like in your family. (Grand Tour?)
    - What do you like to do on the weekends with your family?

5. What has your child shared with you about our school day?
    - Any friends?

6. What are your favorite activities to do with your child?

7. What are some of your child's or your favorite foods?

8. Is there anything (resources) I can help you with?

9. Tell me about important people in your child's life.
    - Who does your child enjoy spending time with?

10. With 2 languages spoken in the house, can you tell me about how you balance them—when you use them?
    - What can you tell me about your first language?

11. Can you tell me about how your parenting is the same/different from your parents?

12. What are the challenges/joys of being a parent?

Appendix C
Sadie's Family Night Activity Plan

Notes about focal child:
Clara is a fun loving child who is always happy to come play a game at the table (or anywhere else) with me. She loves to learn and loves to repeat after me pretending she said the answer. She can count by 1:1 correspondence up to 14, and has just started adding 16-20 to that counting. She recognizes number 1, and that seems to be her favorite number, as she writes it frequently and it is usually her guess for the estimation jar.

Funds of Knowledge utilized:
I have learned from home visits that Clara's family plays board games when they spend family time together inside the house. They used to play trouble frequently, until her younger brother broke the game. Through discussion, I have learned that they like to play with the "take-home" bags that get sent home.

Activity description/sketch/photo (by materials):
This activity is called "number necklaces". It contains lacing strings, beads, dry erase markers, laminated paper circles, and number cards. First the child picks a number and the corresponding number card. The cards have a number written on them and the corresponding number of stickers. The child uses 1:1 correspondence to put that number of beads onto the number card. He/she then strings the beads onto the necklace along with a laminated paper circle. The child then uses the dry erase marker to write the corresponding number on the circle, making a number necklace.

Why this activity?
I wanted to come up with an activity that:

- Required counting of objects
- Required recognition of written numbers
- Matched that counting with the visual number
- Gave a connection to the verbal number and written number

Since the only number Clara visually recognizes is 1, but can count with 1:1 correspondence up to 14, I wanted to connect that verbal counting to associate visual numbers with it. Also, Clara loves to play dress-up and string beads together in the art area, so I thought this would be an activity she would be excited to partake in.

Math Content:

Counting
- ✓ Verbal counting
- o What number is next
- ✓ Counts objects

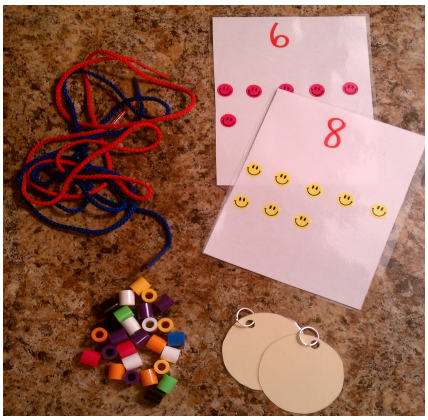
Quantifying
- o Subitizing
- o Combines & separates objects
- ✓ Makes sets of objects
- o Knows which set has more
- ✓ Various counting strategies

Connecting numerals to quantities
- ✓ Numeral recognition
- ✓ Connects numerals to counted objects

Learning/development promoted:

- **Health & Physical Development**: fine motor skills
- **Social & Emotional Development:** working together, playing together

- **Language Development & Communication:** verbal counting, asking for assistance if needed
- **Approaches to Learning:** initiative, engagement, persistence
- **Cognition & General Knowledge:** see math content covered



Materials:
Lacing string
Beads
Laminated paper circles
Number cards
Dry erase markers

Preparation:
The string and beads were purchased, and then I put stickers onto cards with the corresponding number and laminated them. I also cut circles, laminated them, hole-punched and put little rings onto them.

How will you know what is learned?
- I hope for my focal child to be able to recognize first numbers 1-5, and then moving onto higher numbers. To assess this, I will observe the numbers she has written and ask her to identify that number on her necklace.
- I will also watch and listen to her 1:1 correspondence counting skills to make sure the number written on the necklace matches the correct number.

Possible Modifications:
This game can be used for many levels, using only numbers 1-5 for beginning number recognition, and moving up to 20 for more advanced learners. The game also includes many laminated paper circles and lacing strings to make a sequence of number necklaces 1-20.

Notes:
This will work for some students because:
- This is an independent centers choice that they can move freely in and out of.
- It is self-correcting by matching the number on the card to the number written.

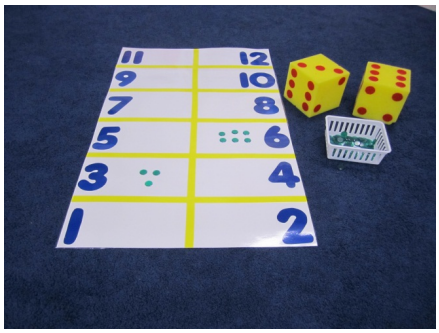
This will not work for some students because:
- Some students will not actively engage in this type of fine motor math activity.

Appendix D
Shelly's Family Night Activity Plan

Notes about focal child:
My focal child's family is from Tibet, and math skills are highly valued in his home. He speaks primarily in English, but in the home, his parents speak Tibetan. When he first started in my classroom in September, he did not appear to have much language, and did not initially demonstrate many mathematical ideas. However, around the third week of school, he suddenly began counting fluently using the wall calendar as a guide, and from there has blossomed in his knowledge of math concepts. He can count fluently to 39, and enjoys counting how many children are in the classroom, always counting who is there and who is not. He has learned to quickly scan the group to count children, and can often be found counting objects. He is very active and enjoys games where he can manipulate objects.

Funds of Knowledge Utilized:
I learned that his parents do math activities with him at home on the Ipad, and that he has a thirst for problem solving and counting. He often uses these skills in the home when he is playing video games. He enjoys math when he is engaged and thinking, and shies away from rote memorization. His father had previously worked as an inventory control supervisor, and knowledge of counting was extremely important to his work. He has tried to instill a love of numbers in his son.

Activity Description:
I made a number grid game for that could be used in many different ways. I wanted to have a game that could be differentiated easily, for although I am targeting my focal child with this game, I have children with many different skill levels in my classroom and I wanted a game that could be appropriate for all skill levels.



My game board has 12 spaces. I used cut out numbers and plastic tape to define the number grid, then had it laminated. To play this game, you will need two large foam dice with dots. The object of the game is to roll two dice and place the number of chips that were rolled on the die onto the board. For my focal child, I want to see him roll the dice and count how many dots there are. I want to see if he can quickly scan the dots on the dice and pick up the appropriate number of chips and place them on the corresponding number. As my focal child often shows higher levels of mathematical knowledge, he could do this in several ways. He may roll a 4 and a 6 for instance. He may put 4 chips on the 4 space, and 6 on the 6 space, or he may add them together and put them on the 10. There are many ways this game can be played, and my purpose in making it this way was so I could expand on his learning by making it more open-ended.

There is no "winner"' when the game is played solo, but when two or more children play, they can see who rolled the highest number, and that child would be the winner.
The purpose of this game is to:

- See how well he can subitize numbers
- Have a game in which all children in the class can participate
- Create a way for him to manipulate objects while learning

Math Content:

Counting	Quantifying	Connecting numerals to Quantities
Verbal counting	Knows which set has more	Numeral recognition
Counts objects	Subitizing	Connects numerals to counted objects
	Various counting strategies	

Learning/Development promoted:

- ✓ Health and physical development – fine motor skills
- ✓ Language Development and Communication – Will need to verbalize numbers rolled when playing with a peer
- ✓ Cognition and General Knowledge – math concepts described below

Materials:
Game Board
Two sets of Foam dice (one with dots, one with numbers)
Chips or other manipulatives

Preparation:
I have made the game board out of tagboard, cutout numbers and plastic tape, but this could be modified any way the creator chooses. I have the dice and the manipulatives in my classroom, so I will just need to gather materials.

How will you know what is learned?
I will be watching and listening to my focal child as he rolls the dice and counts out the manipulatives. I will also see how he is distributing the chips, and see at what level he is able to subitize and count.

Possible modifications:
I created this game with the intent of modifying it as needed. My focal child will use dice with dots, but I will also have dice with numbers for those children who are not yet counting and are beginning to match numbers. Due to the open-ended nature of this game, there are many options for how it can be used, and each teacher will be able to use it in the way they see fit for a particular child.

Appendix E
Sadie's Action Research Game Descriptions

Week 4 I implemented the number monsters game. The goal of the number monsters game is to roll the number dice, either 1 or 2 dice, recognize that number, put that number of eyes onto the monster and write the corresponding number in the box. The students really enjoy using the dice. "They roll and count and ask 'how do I write a 5?'" (Reflective Journal, 3/6/2013). They are also self-challenging, "The students started to not use the dice and just added eyes then counted how many they had and wrote that number in the box. They wanted to write higher numbers; asking how to write those numbers… Kyle didn't quite know how to make a 4 and said, "I looked at the 4 on the calendar." They were asking how to make higher numbers like 12 and 14" (Reflective Journal, 3/8/2013).

On the ninth and final week, I implemented the monster eyes game. For number monsters, the students are using the game in a variety of ways. "Some children are rolling dice, putting eyes on and not writing the numbers, while some children are adding eyes, counting how many they put on and asking me how to write that number; they're doing higher numbers this way. Some children are helping others by teaching the ones who are ready to move away from free exploration into playing the game for its intended purpose" (Reflective Journal, 4/10/2013). On April 12th I wrote, "They're showing each other how to write the numbers and working together, saying things like "this is how you write a 6", and "You get the 4, I get the 5"… Kyle wrote his name in the box of the number monsters and said it was the "Kyle monster". When asked how many eyes the monster had he put a 5 on the board and said, "Kyle has 5 eyes", then counted 5 pretend eyes in his own face." It has become second nature to be social with the games and interact with each other even if they may have their own boards with different numbers.

Appendix F
Shelly's Action Research Game Descriptions

Activity #1

One of the first activities to be placed out at the math table is a set of mailboxes numbered from one to ten. Next to the mailboxes are four sets of ten frame cards also numbered from one to ten. The object of this activity had multiple outcomes for its use. One option was for the children to sort numbered "mail" into the correct boxes, using the corresponding dots on the number cards to subitize and recognize numbers. My thought was that the children would help each other identify numbers and work together to sort the card into the appropriate boxes.

The outcome of this activity was as I expected. Children sorted the cards and placed them in the correct mailboxes. They counted cards and checked to see how many of cards they had in their possession, and communicated with each other to ask for a specific card to go in their mailbox. I also noticed that when they were finished with this activity, two children wanted to line up the mailboxes in numerical order. They both communicated with each other to make sure the mailboxes were lined up correctly from one to ten. This process was repeated each time they used the mailboxes.