Early Childhood Educators' Beliefs and Classroom Implementation of Literacy Learning Standards

By

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A dissertation submitted in partial fulfillment of

the requirements for the degree of

Doctor of Philosophy

(Curriculum and Instruction)

at the

UNIVERSITY OF WISCONSIN-MADISON

2018

Date of final oral examination: August 23, 2018

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Acknowledgments

It has been a fruitful journey. This work would not have been possible without the support of many people. I do hereby acknowledge all of them.

I would like to express the deepest appreciation to my advisor Dr. Catherine Compton-Lilly, who teaches me how to be a good researcher, writer, and educator. This dissertation would not have come to a successful completion without her valuable guidance, scholarly inputs, and persistent help.

I am especially indebted to Dr. Gary Price, who has been a truly dedicated mentor, teacher, and role model, and taught me a great deal about both scientific research and life in general. He understands and values who I am and always patiently listens to my needs. I will always remember walking on the Quarterdeck Drive in snowy, rainy, and sunny days on the way for those life-inspiring meetings.

I would like to thank my co-advisor, Dr. Dawnene Hassett who believes in me and always supports me unconditionally. Each of the members of my dissertation committee, Dr. Michael Apple, Dr. Dan Bolt, Dr. Mary Louise Gomez, and Dr. Margaret Hawkins, has provided me extensive professional guidance. Special thanks to Dr. Lien-An Hsu, who is like a father to me. I am very much privileged to learn from him.

I would like to extend my sincere thanks to my friends, Kelly Hayek, Dr. Cara Chen, Ya-Chin Lin, Gin Schwarz, and Yen Lee, who extended their encouragement and support at various phases of this research, whenever I approached them.

Finally, but by no means least, I am hugely appreciative to my parents, sister, and 97 year-old grandmother for almost unbelievable support. Most importantly, I am extremely grateful to my loving husband, Jui-Yang, who is always there for me and completes my life. I dedicate this dissertation to him.

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Chapter 1 Introduction

In the U.S., with the passage of the federal education policy of *No Child Left Behind* (NCLB) and the early learning initiative *Good Start, Grow Smart*, the development of early learning standards has become an increasingly important trend in early childhood education (Grisham-Brown, Pretti-Frontczak, Hawkins, & Winchell, 2009). All 50 states and the District of Columbia have approved early learning standards for three-to-five-year-old children (Scott-Little, Lesko, Martella, & Milburn, 2007; Drew, Christie, Johnson, Meckley, & Nell, 2008) and encourage early childhood educators to align their curriculum and assessment with these standards.

One learning area that has been emphasized in these standards is early literacy. Many studies have shown that early literacy plays an essential role in children's later reading and academic success (Catapano, 2005; Cunningham, & Stanovich, 1997; Scarborough, 2009). Early literacy learning standards highlight essential early literacy skills and knowledge for young children. Early childhood teachers are often encouraged or required to apply these standards in their classrooms to improve children's literacy learning. Studying how teachers apply these standards in their classrooms has become an new issue in educational research, since most states' early learning standards have been developed and used in early childhood education only in the past ten years (Scott-Little, Kagan & Frelow, 2006; Scott-Little, Lesko, Martella & Milburn, 2007).

Researchers have explored associations between teachers' implementation of early learning standards, and their beliefs about children's literacy learning and standards-based education. They found that teachers' beliefs influence how they apply the standards in their classrooms (Day, Elliot, & Kington, 2005; Lee, Huang, Law, & Wang, 2013; Mather, Bos, & Babur, 2001; Sverdlov, Aram, & Levin, 2014).

However, these existing studies often present four major limitations. First, the ways researchers have studied how early learning standards influence teachers' beliefs and teaching practices are limited. Most of these studies explored the influence of learning standards on teaching only after teachers have been using the standards rather than studying the teachers' practices before, during, and after teachers' first encounter with the standards. These studies relied on teachers' retrospective descriptions to understand how the standards might change teaching practices and how teachers thought about these changes. However, these retrospective descriptions might not be reliable since teachers might not able to trace their beliefs and practices over time.

Second, when discussing how the standards might influence teaching practices, these studies often focused on a single or a small number of teaching practices. They treated teaching as comprised of separable pieces rather than treating it as a whole, and addressing a full range of practices, including thoughts, actions, and interactions with others.

Third, most of these studies have explored teachers' beliefs about and responses to mandated sets of learning standards. Because early childhood educators are required to implement these mandated standards, they were concerned about losing autonomy (Day, 2002; Day, Elliot, & Kington, 2005). It was therefore difficult for researchers to explore teachers' views on the standards as these teachers generally tended to reveal negative attitudes toward the standards.

Finally, to the best of my knowledge, no study has yet explored how early literacy learning standards influence teachers' beliefs and practices. This research project therefore explores how teachers' beliefs and literacy practices are associated with their use of a set of early literacy standards—the Wisconsin Early Literacy Learning Standards

(WELLS). This research project examines teachers' literacy teaching--including their beliefs, instructional practices, and interactions with others--before, during, and after their formal encounter with the WELLS.

Three main reasons explain why this research project focuses on the WELLS instead of other sets of early learning standards. First, because of geographic proximity (i.e., I am studying in Wisconsin), this research project was designed to be conducted in Wisconsin. Unlike other sets of learning standards (e.g., Head Start Child Outcomes Framework) that have been adopted by Wisconsin teachers targeting at certain types of early childhood programs, the WELLS, which is part of Wisconsin Model Early Learning Standards (WMELS), are designed to be used in all kinds of early childhood programs in Wisconsin (Wisconsin Department of Public Instruction, 2011). I could therefore discuss these standards with teachers across educational programs. Second, the WELLS is a set of voluntary standards so at the onset of this research project not every teacher has applied the WELLS in their classroom. Therefore, I had the opportunity to explore teachers' initial beliefs about the WELLS and their implementation of the WELLS. Third, since implementing the WELLS is voluntary, teachers are more likely to express their beliefs and make their decisions about the use of the WELLS based on their knowledge and beliefs about children's literacy learning.

This chapter presents three sections. First, I describe my motives for conducting this research project and my research questions. Second, I discuss the theoretical model that frames this research project. Third, I define the terms "early literacy" and "teachers' beliefs".

Motivation and Research Questions

This section describes several significant experiences that influenced my choice of

the research topic and research questions.

My study was inspired by Fulghum's (1988) words: "All I ever really need to know I learned in kindergarten". For me, these words evoke three interesting issues: (1) human needs across a lifetime, (2) the goals of education and what early childhood students should learn, and (3) how educators ensure that children acquire what they should learn in early childhood education. My interest is in exploring what children should learn to ensure school readiness and future success, as well as defining teachers' roles in early childhood education.

Although these are complicated issues, early learning standards present a tool for exploring these issues. Early learning standards describe skills and knowledge children are expected to learn in early childhood programs. They also guide curriculum design, instruction, and evaluation. Thus, I began reading related literature. I found that various sets of learning standards have been developed including Head Start Child Development and Learning Framework (HSCDLF) (Head Start Bureau, 2010), the Common Core State Standards for English Language Arts K-5 (CCSS) (Common Core State Standards Initiative, 2010), and state early learning standards (e.g., Wisconsin Model Early Learning Standards, Wisconsin Department of Public Instruction, 2014).

While carefully examining these documents and their use, I found two notable patterns. First, these documents emphasize that standards are based on research and incorporate the beliefs of diverse groups of people including educational practitioners, experts, and parents. These documents (e.g., Common Core State Standards, WMELS) often claim that their standards represent local educational expectations. It is common to see a statement like "the basis for the development of the Wisconsin Model Early Learning Standards is a set of guiding principles that specify beliefs and values about

young children in Wisconsin" (Wisconsin Department of Public Instruction, 2014, p.1). However, it is doubtful that "one" set of learning standards can meet everyone's expectations. These documents also fail to explain who was involved in the process of developing that standards and how they reached agreement on what should be learned and taught in early childhood.

Second, most of these standards are expected or required to be implemented in classrooms (either by law or by regulations). This trend has led to increasing numbers of teachers accessing learning standards and implementing them in their classrooms (Scott-Little, Lesko, Martella, & Milburn, 2007). These standards documents suggest that learning standards can operate as guidelines for developing curricula and assessments; however, they seldom describe how teachers should implement the standards. I therefore wonder how early learning standards are being used by educators.

In my previous research, I explored how a new standards-based assessment was implemented by 24 teachers in ten preschools in Taiwan and how the teachers used evaluation results to adapt their curriculum. I had opportunities to interview the 24 preschool teachers and conducted observations in their classrooms. This research experience taught me three lessons that deeply influenced how I framed the current research project and how I view learning standards and teachers' roles in using standards.

First, I learned that educators have unique views on children's learning and learning standards, and these beliefs influenced the ways teachers used the standards. For example, one teacher reported that the epistemology embedded in the standards-based assessment conflicted with her beliefs, which was grounded in the Montessori philosophy. Thus, she argued that the standards might not help her improve her teaching practices and was reluctant to use the standards. Another teacher argued that the standards created a

common language among early childhood educators and facilitated communication with her students' parents. She used the standards to explain her teaching plans and to guide her observations about students' learning. My observations suggest that “one” set of learning standards can be interpreted and used in different ways based on teachers' professional knowledge and beliefs. When teachers read the expected skills and knowledge for children described in the standards, they had opportunities to revisit and reinforce/adjust their existing beliefs about children’s learning. This finding reveals the importance to understand teachers' beliefs when exploring how they use the standards in their classrooms. In addition, it reveals that teachers' existing beliefs (e.g., beliefs about Montessori philosophy) and teaching experience influenced how they responded to the standards that were new to them. In this research project, I explored teachers' literacy beliefs and literacy instruction, and continuities and changes in their literacy beliefs and literacy instruction before and after their use of the WELLS. I also described relationships between teachers' beliefs and their implementation of the Wisconsin Early Literacy Learning Standards (WELLS).

Second, any set of learning standards can be interpreted as supporting various methods. Through the classroom observation in my earlier research, I found that the teachers used various activities to help children achieve a specific learning standard. For example, in order to help children recognize traffic signs, some teachers told children a related story; others arranged a field trip to school’s neighborhoods; still others posted related posters in the classroom. These observations showed the range of learning experiences that teachers provide to help children meet a particular standard. These examples suggest that teachers do not simply follow or implement standards but they are active users and that through their use they crafted what the standards looked like in

practice. This finding reveals the importance to explore teachers' decision-making processes related to using the standards. This finding also reveals the importance to explore connections between teachers' perceptions of the WELLS and their implementation of the WELLS. I discussed these two important issues in this research project.

Third, teachers' teaching practices were influenced by various factors beyond the standards including their interactions and relationships with other people. For example, one teacher explained that she provided foreign language classes and writing activities to children her director required her to do so. Another teacher reported that she had to use textbooks and assign homework in order to meet parents' expectations. Still another teacher began to implement the new standards because her colleague recommended them to her. These examples suggest that teachers' interactions with other people and program requirements influenced their teaching. In this research project, I explored factors identified by teachers or me that showed explicit influences on teachers' implementations of the standards. Specifically, I discussed program factors' influences on teachers' use of the WELLS.

In brief, based on my understanding of the existing literature related to early learning standards and my previous research experience, I find that teachers influence how early learning standards are used in classrooms. I find that teachers are active users of the standards and they differently interpret and use the standards based on their beliefs, professional knowledge, teaching experiences, interactions with others, and program requirements. However, how teachers use the standards in their classrooms has not been fully studied. It is unclear how teachers' literacy beliefs and instructional practices are associated with their uses of standards. It is also unclear how teachers decide how to use

the standards in their classrooms. Therefore, this research project focuses on the following research questions:

1. How are early childhood educators' previously reported beliefs about children's literacy learning associated with their first formal encounter with and responses to literacy learning standards?
2. Subsequent to early childhood educators' formal introduction to literacy learning standards, to what extent and in what manner are the concepts and priorities reflected in those standards expressed in teachers' reported practices?
3. How do early childhood teachers retrospectively describe their experiences of evaluating and implementing/not implementing a new set of literacy learning standards in their classroom?
4. To what degree does the strength of teacher agreement with WELLS-recommended practices relate to the frequency with which teachers report engaging in those practices?

Theoretical Framework

This research project recognizes the value of the teachers' role and specifically focuses on the uses of the Wisconsin Early Literacy Learning Standards (WELLS). I explore teachers' beliefs and their reported classroom practices as they make decisions about implementing the WELLS in their classrooms. The importance of the teachers' role in educational reforms has been identified in many studies (Beijaard, Verloop, & Vermunt, 2000; Lee, & Ginsburg, 2007; Lee, Huang, Law, & Wang, 2013; Sheridan, Edwards, Marvin, & Knoche, 2009). Teachers' beliefs and their classroom practices are associated with, and possibly guide, how they integrate a specific educational policy into their practices (Fang, 1996). Additionally, teachers' professional knowledge and skills about

what to teach and how to teach influence their planning and instruction, and accordingly influence students' learning experiences and outcomes (Harris, 2012). It is therefore crucial to explore how teachers' beliefs and responses to an educational policy affect their teaching, in order to understand how policies are applied into practice and to ultimately understand the effectiveness of policies.

Professional Capital

The concept of professional capital, proposed by Hargreaves and Fullan (2012), is a viable theoretical framework from which to analyze teachers' implementation of the WELLS. Aligned with the emphasis of this research project, professional capital views the teacher as the most important factor that influences children's learning and achievement.

Hargreaves and Fullan (2012) maintain that professional capital is a productive way to think about teacher development and a powerful strategy to promote effective teaching and quality education. In Hargreaves and Fullan's book (2012)--*Professional Capital: Transforming Teaching in Every School*--they discuss current challenges and opportunities facing educators and argue that improving teacher quality is the best investment when faced with challenging educational circumstances. Professional capital differs from business capital, which views education as a for-profit enterprise and advocates quick and immediate returns on investments by reducing resources relative to outcomes. The professional capital model promotes a long-term investment in developing high quality teachers who are fully committed, adequately prepared, continuously developed, and well-networked.

The word *professional* references two layers of meaning: *being professional* and *being a professional* (Hargreaves & Fullan, 2012). *Being professional* relates to what a

person does and how a person acts. It entails being unbiased and maintaining high standards of conduct and performance. Being professional refers to upholding quality and displaying character, which in the case of teaching includes not gossiping about parents or disrespecting colleagues. *Being a professional* involves how other people think about you and how their views affect how you understand yourself. *Being a professional* also entails whether or not people recognize teaching to be a profession.

Hargreaves and Fullan (2012) argue that if teachers want to be recognized as professionals, they need to develop and invest their professional capital. Professional capital is comprised of three components—human capital, social capital, and decisional capital. Hargreaves and Fullan (2012) maintain that "effective teaching for the whole profession is a product of these three forms of capital amplifying each other" (Hargreaves & Fullan, 2012, p. 88). Hence, each component of professional capital plays an important role in creating the capacity for high quality teaching. Moreover, examining teachers' professional capital helps to understand how teachers develop and use their professional capital to make teaching decisions and improve their teaching. I proceed to introduce each form of capital.

Human capital. Human capital refers to "having and developing the requisite knowledge and skills" (Hargreaves & Fullan, 2012, p. 89). In the teaching context, human capital includes understanding how to teach and how students learn; as well as understanding their academic subjects, and their students' family circumstances and cultural backgrounds. Human capital is related to individual talent. Human capital is also about passion and the moral commitment to serve all children and toward one's own continuous learning and improvement (Hargreaves & Fullan, 2012). In this research project, when discussing teachers' human capital, I focused on but not limited to teachers'

beliefs and knowledge related to literacy teaching.

Hargreaves and Fullan (2012) argued that the most powerful way to improve individuals' human capital is through learning with other people, which indicates the importance of developing social capital.

Social capital. Social capital refers to "how the quantity and quality of interactions and social relationships among people affects their access to knowledge and information; their senses of expectation, obligation, and trust; and how far they are likely to adhere to the same norms or codes of behavior" (Hargreaves & Fullan, 2012, p. 90). Social capital concerns how teachers' relationships and interactions with other people including parents, colleagues, administrators, principles, and policymakers, may influence their teaching. Social capital is a resource for people and exists in relationships. Social capital provides access to other people's human capital and increases individual knowledge.

In addition, social capital involves building networks among individuals and across classrooms, schools, communities, and universities. Social capital advocates for collaboration and teamwork. Hargreaves and Fullan (2012) argue that improving current educational system requires not only outstanding individuals but also outstanding professional communities in the schools and the wider communities. In this regard, many scholars have been studied the criteria for creating effective professional learning communities (Cochran-Smith & Lytle, 1999; Hargreaves & Fullan, 2012; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006) and identify four common features.

First, community members have a shared interest and commitment. Since they have a shared vision, they make efforts to achieve it. Second, the professional learning communities create spaces and cultures in which people can share, communicate, and trust each other. Members in a professional learning community feel comfortable

discussing sensitive issues and risking self-revelation. Third, community members regularly interact with each other so they have time to raise questions, develop solutions, translate the solutions into practices, and reflect on their teaching practices. Fourth, community members collaborate with each other. They share repertoires of resources including experiences, stories, and tools. They not only support and help each other but also provide feedback.

In conclusion, teachers' interactions within professional learning communities contribute to the development of social capital. Given that the research purpose is to understand how teachers understand and use the Wisconsin standards, this research project specifically focuses on interactions that influenced teachers' understanding and use of the WELLS.

Decisional capital. Decisional capital refers to the ability "to make wise judgments in circumstances where there is no fixed rule or incontrovertible evidence to guide them" (Hargreaves & Fullan, 2012, p.94). Professional teachers make their decisions based on their experiences, knowledge, interactions with other people, research, assessments, and observations. Hargreaves and Fullan (2012) argue that experience, practice, reflection enable teachers to make better informed decisions. What differentiates amateurs from professionals is the amount of time people practice the skills and the degree to which they reflect on their experiences.

However, practice alone is not enough to enable teachers to make informed decisions. Teachers must learn from their practice. That is why teachers' ability to reflect is important. Informed by Schön (1983), Hargreaves and Fullan (2012) describe three different types of reflection: reflecting *in* action, reflecting *on* action, and reflecting *about* action. These three types of reflective practice are described below.

Reflecting *in* action (Hargreaves & Fullan, 2012) refers to "the capacity to walk around a problem while you are right in the middle of it, to think about what you are doing even as you are improvising it" (Hargreaves & Fullan, 2012, p.98). For example, when teachers consider whether to stay at the front of the classroom or circulate around the classroom, to speed up or slow down their lecture, to ask a question or restate an idea, and to demonstrate an idea in another way, they are reflecting *in* action.

Reflecting *on* action (Hargreaves & Fullan, 2012) describes reflection after a practice has finished. When teachers are reflecting *on* action, they may ask questions such as: Why the boys did not participate in the writing activity as actively as girls did? Why do some of the students never choose to play in the art learning area? Are the learning materials provide too challenging or too simple? What other learning materials might be added to help improve students' learning?

Reflection *about* action (Hargreaves & Fullan, 2012) refers teachers' reflection on "things in their environment that distract them from what's important" (Hargreaves & Fullan, 2012, p.99). For example, teachers may be occupied by trivial matters such as cleaning their classroom, responding to phone calls, and checking teaching supplies, and have no time left for teaching. Reflecting *about* action enables teachers to identify and remove distracting factors from their classrooms.

These three types of reflection practice provide teachers with opportunities to inquire into, reflect on, and revise their teaching. Reflective practice can maximize teachers' effectiveness. In this research project, teachers reflected on their literacy beliefs and teaching practices through surveys and interviews. I was able to explore teachers' decisions about the use of the WELLS in their classrooms. In addition, through continuously reflecting on their teaching beliefs and practices, teachers were able to

revisit their teaching decisions and possibly improve their teaching.

As illustrated in Figure 1.1, the three forms of professional capital interact.

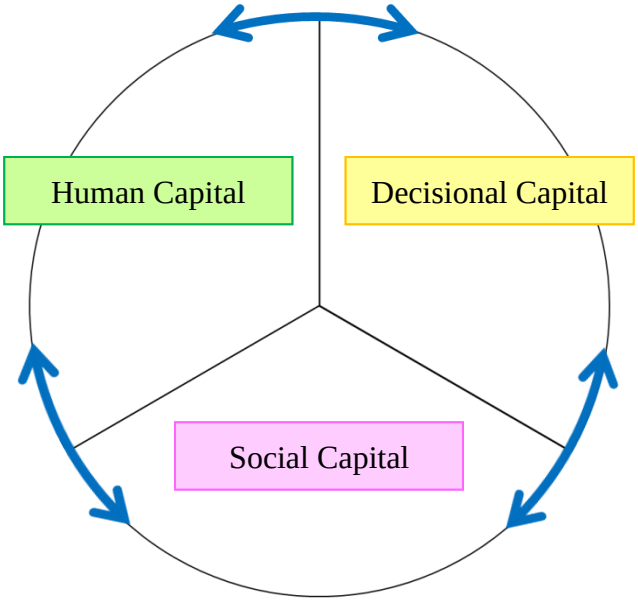

Figure 1.1. Components of the professional capital influence each other.

As shown in Figure 1.1, the blue two-direction arrows placed between any two types of capital indicate that forms of professional capital have reciprocal effects. For example, as teachers extend human capital including their knowledge about teaching practices, they also enhance their decision-making abilities. In addition, working as a team (a source of social capital) increases teachers' human capital (e.g., knowledge and teaching skills). Furthermore, teachers make decisions (i.e., decisional capital) based on their human capital including their knowledge, experiences, and information obtained through their social interactions (i.e., social capital). In turn, teachers' decision-making abilities influence what they share with their colleagues (i.e., influence teachers' social interactions).

Professional capital is dynamic. Professional capital is "being generated, circulated,

and reinvested all the time because it is endemic to the culture of the profession and is embedded in the daily work of teacher" (Hargreaves & Fullan, 2012, p.87). In other words, teachers' professional capital changes based on what teachers experienced in the past. This characteristic aligns with the focus of this research project. That is, to explore changes and continuities in teachers' beliefs and teaching practices before and after their use of the WELLS.

The Importance of Program Environment

In addition to emphasizing the importance of investing in professional capital, Hargreaves and Fullan (2012) also advocate the importance in creating a supportive environment in workplace. They believe that it takes professional teachers and supportive systems including schools, districts, and governments to work together to promote quality education. Program (workplace) environments shape how teachers teach. For example, teaching in a place full of praises versus constantly facing punishments, or with rich resources versus limited resources informs teaching experiences. It is the responsibility for the leadership of education including governments and principals to create supportive climates for teachers to be able to invest in their professional capital. It takes individual teachers and the entire educational network to work collectively to support the investment in professional capital.

Given the importance of program environments, this research project explored program factors' influence on teachers' literacy beliefs and implementation of the WELLS.

Affordances of Professional Capital Model

This theoretical model affects four affordances for exploring how teachers respond to an educational policy. First, this model enables the researcher to explore various

aspects that inform teaching practices and beliefs. The study views teaching as a process involving both belief and action (Clark and Peterson, 1986), and maintains that how teachers teach is associated with their past experiences, interactions with other people, and educational contexts. Professional capital considers human capital (including knowledge and skills related to teaching and learning), decisional capital (including how teachers decide how to use the WELLS), and social capital (including relations with others) as a whole. Using this model enables the researcher to consider the influence of teachers' beliefs, actions, and interactions with others on their use of the WELLS.

Second, this model enables the researcher to understand individual teacher's teaching practices. This research project assumes that teachers think differently about children's learning and as a result teach in varied ways based on their unique accumulation and activation of professional capital. This model defines teachers' professional capital as assuming three forms: human capital, social capital, and decisional capital. Each teacher's accumulation of professional capital is unique because every teacher has different amounts of the three forms of capitals that were acquired in different ways and are activated differently in practice. The intention of exploring teachers' professional capital is not to evaluate teachers but to understand factors that influence their teaching and their response to educational reforms. By examining the professional capital of teachers, I can explore how teachers' different professional capital affects their implementation of early learning standards. Notably, although professional capital exists within schools and across the teaching profession (Hargreaves & Fullan, 2012), this research project focuses on professional capital at the individual teacher level.

Third, this model acknowledges that teachers' continuously accumulate and access capital. Teachers' previous experiences shape how they teach now. This model enables the

researcher to study teachers' responses to a given educational policy—the WELLS--that they were not familiar with. I was able to explore teachers' previously reported beliefs about children's literacy learning and to explore how these beliefs might have changed after their first formal encounter with the standards. In other words, I explored teachers' beliefs and actions at different points in time.

Fourth, this model creates a space for me to position myself as a potential source of social capital for teachers. Social capital refers to that teachers learn through interactions with others (Hargreaves and Fullan, 2012). I treated myself as a source of social capital as I worked together with teachers to discuss their beliefs and practices related to early literacy learning standards. In short, I shared my own professional capital with teachers. To promote a high-quality personal interaction with teachers, I followed Hargreaves and Fullan's (2012) suggestions for fostering social capital. We met together, freely shared our ideas, inquired into teaching practices, conceptualized new teaching activities and strategies, and learned from each other. In addition, we used data including classroom observations to understand students' needs and rethink teaching practices. Teachers' interactions with me created spaces for teachers to examine and rethink their beliefs and classroom practices related to early literacy.

In brief, this research project used Hargreaves and Fullan's professional capital (2012) as a theoretical model. Professional capital model recognizes teachers' essential role in educational reforms and emphasizes the importance in investing in professional capital to promote high quality teachers and education. Professional capital is comprised of three forms of capital—human, social, and decisional capital. Becoming professional teachers requires teachers' constant investment in developing their three forms of capital. It also requires a supportive program environment to support teachers' development of

professional capital. Professional capital model concerns what teachers learn and use as they teach and how to become professional teachers. Using the professional capital model helps to address the research questions of this study because it helps to understand how teachers accumulate and access their professional capital to decide how to implement the WELLS. Since the three forms of capital interact, this model helps to explain connections between what teachers believe and how they implement the WELLS. In addition, this model values the importance of both individual teachers and supportive program environments to promote quality education. I explored teachers' and programs' roles in influencing the use of the WELLS in classrooms.

Definition of Terms

This research project explored the associations among teachers' beliefs about early literacy standards, their literacy instruction, and their reported use of a new set of early literacy standards. This section defines the terms "early literacy" and "teachers' beliefs" as used in this research project.

Definition of Early Literacy

In general, early literacy comprises knowledge, skills, and attitudes that constitute children's abilities of communication, language, verbal and nonverbal, reading and writing. In this research study, early literacy learning standards refer to those described in the area of early literacy in the document of Wisconsin Model Early Learning Standards. The Wisconsin Early Literacy Learning Standards (WELLS) include knowledge and skills related to reading and writing but does not include listening and understanding, and speaking and communicating. Nevertheless, when exploring teachers' beliefs about children's literacy learning and their classroom literacy practices, the conversations were not limited to the contents of the WELLS. Instead, exploring how early childhood

teachers understood children's literacy learning and enacted literacy instruction was central to this research project.

This research project discusses the literacy learning of young children between the ages of 2.5 and 5.

Definition of Teachers' Beliefs

Teachers' beliefs include teachers' knowledge and experiences. The term "teachers' beliefs" used in this research project refers to dimensions of teachers' human capital (Hargreaves & Fullan, 2012) with a specific focus on knowledge and experiences related to early literacy.

Chapter 2 Early Learning Standards and Teachers' Literacy Beliefs and Classroom Practices: Literature Review

Researchers emphasize the importance of early literacy experiences for children's later reading and academic success (Abbott-Shim, Lambert, & McCarty, 2003; Strickland, & Riley-Ayers, 2006). The crucial role of early literacy in children's learning and development has drawn federal and international attention. Early literacy has become a central focus of educational policy makers. Literacy-related policies, including Common Core State Standards (2010) and the propagation of state early literacy learning standards, highlight the importance of early literacy learning and skills in early childhood education. These policies have resulted in new requirements for early childhood education and changes in early childhood instruction.

In addition to the acknowledgement of the importance of early literacy, many studies have identified factors that influence the effectiveness of literacy-related policies (Gallant, 2009; Wen, Elicker, & McMullen, 2011). Researchers have emphasized the role played by early childhood educators in supporting children with literacy (Beijaard, Verloop, & Vermunt, 2000; Lee, & Ginsburg, 2007; Lee, Huang, Law, & Wang, 2013; Sheridan, Edwards, Marvin, & Knoche, 2009). These studies generally focus on exploring teachers' beliefs about early literacy, beliefs about literacy-related policies, and teachers' integration of the policies into practices (Day, Elliot, & Kington, 2005; Lee, Huang, Law, & Wang, 2013; Mather, Bos, & Babur, 2001; Sverdlov, Aram, & Levin, 2014).

Consistent with recent research, including the studies mentioned above, this dissertation project recognizes the teachers' roles in children's early literacy learning and in implementing literacy-related policies. This research project explores how teachers' beliefs and teaching practices reflect their encounter with a specific policy—the

Wisconsin Early Literacy Learning Standards (WELLS).

To gain insights into this issue, this chapter explores related studies in relation to three topics: (1) the content of U.S. state early literacy learning standards, (2) the liabilities and strengths inherent in standards-based education, and (3) teachers' beliefs and implementation related to early literacy. I conclude this chapter by summarizing the findings and present goals of this research project.

The Content of U.S. State Early Literacy Learning Standards

Two focus of this section include: (1) the status of U.S. state early literacy learning standards, and (2) the framework and content of the Wisconsin Model Early Learning Standards including Wisconsin Early Literacy Learning Standards (WELLS), which is the focus of this research project.

Status of the U.S. State Early Literacy Learning Standards

In the U.S., with the passage of the federal education policy of No Child Left Behind (NCLB) and the early learning initiatives Good Start, Grow Smart, the development and use of a state early learning standards has become an increasing trend in the early childhood education and care programs (Grisham-Brown, Pretti-Frontczak, Hawkins, & Winchell, 2009). All 50 states and the District of Columbia have approved early learning standards for three-to-five-year-old children (Scott-Little, Lesko, Martella, & Milburn, 2007; Drew, Christie, Johnson, Meckley, & Nell, 2008) and encourage early childhood educators to align assessment and the curriculum with the standards.

Early learning standards describe the knowledge and skills children should learn and achieve (Hambleton, 2001; Harris & Carr, 1996; La Marca, 2001). In general, early learning standards include two types of standards: program standards and child outcome standards. According to Bodrova, Leong, and Shore (2004), program standards refer to

the resources, activities, and instruction and practices provided to improve children's learning and development. Program standards generally include both classroom standards, and teaching and curriculum standards. Classroom standards describe logistical parameters such as the maximum number of children in a classroom; the allowable ratio of adults to children; and the materials and supports available and accessible to children and families. Teaching and curriculum standards describe what activities are appropriate (age appropriate, culturally appropriate, individually appropriate) for children at various ages and levels.

Child outcome standards describe the knowledge and skills children should learn and do by a certain age. Child outcome standards encompass content and performance standards. The former identify the range of knowledge, skills, habits, attitudes, and dispositions that children are expected to master; while the latter describe the ways by which children demonstrate that they have achieved the content standards (Bodrova, Leong, & Shore, 2004).

Although early learning standards are not curriculum guidelines, they describe what should be taught and suggest how teachers should teach. The content of early learning standards is associated with, and possibly shapes, teaching practices. Hence, it is necessary to examine what are included in the early learning standards in order to understand how the standards influence early childhood education. Several studies have analyzed the content of early learning standards across the 50 states (Neuman & Roskos, 2005; Scott-Little, Kagan, Frelow, Nalley, DeMeester, & Call, 2005; Scott-Little, Kagan, & Frelow, 2003a& 2006). They conclude that each state has developed its own early learning standards and these standards differ in how they define what children should learn and know in their early lives.

For example, Scott-Little and her colleagues (2005) analyzed documents from 36 states to identify the numbers of standards items and the content of standards included in these documents. They found significant differences in the number of standards items required in each state. The average number of standards items was 151, with the sample ranging from 50 to 371. A similar result was found in an analysis of the content of headings appearing in the standards documents. Only eight states included approaches to learning (e.g., initiative and curiosity, engagement and persistence, and reasoning and problem solving) in their standards documents; 27 states mentioned literacy, but almost every state (35 states) addressed language and communication.

One year later, Scott-Little, Kagan, and Frelow (2006) conducted a content analysis of 45 state early learning standards documents[1]. The report discusses the range of standards items (indicators) in five developmental domains (i.e., physical well-being and motor, social and emotional, approaches toward learning, the language and communication, and cognition and general knowledge). Among the five, the language and communication domain contained the largest number of standards items. The report indicated that the number of standards items in the domain of language and communication across the 45 state documents ranged from 11 to 188.

In addition, Scott-Little, Kagan, and Frelow (2006) used the five developmental domains (i.e., physical well-being and motor, social and emotional, approaches toward learning, the language and communication, and cognition and general knowledge) to categorize the standards indicators and reported the number of indicators within each

[1] The 45 state early learning standards documents analyzed in the study include the following states: AL, AR, AZ, CA, CO, CT, DE, FL, GA, HI, ID, IL, IN, IA, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NJ, NM, NY, NC, OH, OK, PA, RI, SC, TN, TX, VA, VT, WA, WV, WI, WY. LA and MS each has two standards documents analyzed in the research.

category. Reflecting my own research interests, I specially discuss their results related to early literacy, which they called language and communication development domain. Table 2.1 (Scott-Little, Kagan, & Frelow, 2006) indicates that the standards items (indicators) can be categorized into 16 categories, which can be further divided into two groups--verbal language and early literacy skills.

Table 2.1

Number of Standards Indicator by Categories in Language and Communication Development Domain across 45 State Early Learning Standards Documents

Indicator	No. of States with Indicator	Range in No. of Indicators
Verbal language		
Social uses of language	44	0–17
Creative uses of language	41	0–28
Speaking	41	0–23
Creative expression (non-verbal)	33	0–10
Listening	36	0–8
Questioning	25	0–7
Non-verbal communication	12	0–5
Early literacy skills		
Writing process	43	0–29
Print awareness	43	0–17
Vocabulary and meaning	26	0–17
Phonemic and phonological awareness	42	0–21
Alphabet awareness	41	0–7
Literature awareness	38	0–29
Comprehension of stories, etc.	32	0–18
Book awareness	34	0–6
Story sense	35	0–15

Note. n = 45 standards documents. Adapted from "Conceptualization of readiness and the content of early learning standards: The intersection of policy and research?" by C. Scott-Little, S. Kagan, & V. Frelow, 2006, *Early Childhood Research Quarterly*, *21*(2), 153-173. Copyright 2006 by Elsevier incorporation.

Verbal language skills include seven categories: social uses of language, creative

uses of language, speaking, creative expression (non-verbal), listening, questioning, and non-verbal communication. The early literacy skills include nine categories: writing process, print awareness, vocabulary and meaning, phonemic and phonological awareness, alphabet awareness, literature awareness, comprehension of stories, book awareness, and story sense. These analytic results show the range and diversity of the concepts reflected in early literacy learning standards.

According to Scott-Little, Kagan, and Frelow (2006), when examining the categories addressed by each state document, almost every state had at least one standard related to the social uses of language, writing awareness, and print awareness. However, items related to non-verbal communication were only mentioned in 12 state standards documents.[2] Standards items related to vocabulary were missing in 20 state documents; standards items related to comprehension did not appear in 14 state documents.

Moreover, Scott-Little and her colleagues (2006) reported that some skills and abilities that are strongly predictive of children's future success in reading ability were not addressed in the standards documents. These skills and abilities include reading comprehension, book awareness, alphabet knowledge, a sense of how stories progress, phonological awareness, and print awareness (National Early Literacy Panel, 2004; Whitehurst & Lonigan, 2001). However, as mentioned above, 14 states have no standards related to comprehension; 12 states do not include standards relative to book awareness; 11 states have left out standards relative to a sense of how stories progress. In addition, five states did not include standards addressing alphabet awareness; standards related to phonemic/phonological awareness were absent in four states and standards related to print awareness were absent in three states.

[2] The authors did not report which state document included or did not include particular indicators.

In short, these findings indicate wide variation across state early learning standards regarding the number of standards items and the categories required.

Wisconsin Model Early Learning Standards (WMELS)

This research project explores early childhood educators' responses to the Wisconsin Early Literacy Learning Standards (WELLS) as described in the document of Wisconsin Model Early Learning Standards (WMELS). This section briefly introduces the goal and the structure of the WMELS and the WELLS. A detailed content analysis of the WELLS is presented in Chapter 4.

Introduction of the WMELS. The latest WMELS document was published in 2014 by Wisconsin Department of Public Instruction and was issued in English, Spanish, and Hmong. The WMELS reflect shared values and expectations for Wisconsin educators relative to young children from birth to the beginning of first grade relative to success in school. The implementation of the WMELS is voluntary and, according to the WMELS documents, the WMELS is applicable to all types of early learning environments.

The WMELS has three purposes:

> (1) Share a common language and responsibility for the well-being of children from birth to first grade; (2) Know and understand developmental expectations of young children; and (3) Understand the connection among the foundations of early childhood, K-12 educational experiences, and lifelong learning. (Wisconsin Department of Public Instruction, 2014, pp. 1)

Nine guiding principles specify beliefs and values about young children’s learning and development emphasized in the WMELS:

- Every child is competent and capable.
- Relationships with adults in children's early life are important.

- Each child's early learning and development should include multiple learning areas.
- Expectations for children should be developmentally appropriate.
- Each child develops at different rates.
- Children with different cultural backgrounds share developmental patterns.
- Children demonstrate varied levels of skills and competence within each developmental area.
- Children learn through play and active interaction with their environments and adults.
- Children's first, main, and the most important caregivers and educators are parents.

The WMELS document provides guidance for educators and caregivers in developing activities and arranging classroom environments. It is also a guide for professionals to develop and select developmentally appropriate curricula and assessments to support children's learning. The importance of play as a way of children's learning is emphasized in the WMELS. Although the WMELS do not identify a specific curricular philosophy or approach, it supports the idea that children learn through play. WMLES suggest that play has positive effects on children's development including the improvement of social skills and small-motor coordination.

Framework of the WMELS. The WMELS consist of five interdependent and interrelated developmental domains:

- Health and physical development
- Social and emotional development
- Language development and communication

- Approaches to learning
- Cognition and general knowledge

Each domain is comprised of sub-domains that are organized into developmental expectations, performance standards, developmental continua, sample behaviors of children, sample strategies for adults, and program standards. *Developmental expectations* describe broad and general expectations of what young children should know and be able to do. *Performance standards* represent specific knowledge and skills that young children should know and be able to do. *Developmental continua* address universal predicable levels of children's performance. These levels of performance range from early developmental levels to more advanced levels that would typically be achieved on entrance to first grade. *Sample behaviors of children* reference observable behaviors that demonstrate children's accomplishments that correspond to a given performance level on the developmental continuum. *Sample strategies for adults* provide ways of helping children achieve a specific performance level. Both s*ample behaviors of children* and *sample strategies for adults* are provided as examples and are not inclusive of all children's behaviors or instructional strategies. *Program standards* indicate what programs need to do to ensure children to meet the expectations.

Wisconsin Early Literacy Learning Standards. Early literacy is one of three sub-domains within the language development and communication domain. Wisconsin Early Literacy Learning Standards (WELLS) describe essential literacy skills and concepts needed for enabling children to become successful readers and writers. Early literacy addresses four performance standards:

1. The child develops ability to detect, manipulate, or analyze the auditory parts of spoken language.

2. The child understands concept that the alphabet represents the sounds of spoken language and the letters of written language.

3. The child shows appreciation of books and understands how print works.

4. The child uses writing to represent thoughts or ideas.

(Wisconsin Department of Public Instruction, 2014, pp. 43)

Each performance standard consists of a developmental continuum that includes six to ten progressive levels of performance. A total of 34 progressive levels of performance and numerous samples of children behaviors and instructional strategies are described in the early literacy sub-domain. A detailed content analysis of the WELLS is presented in Chapter 4.

The Liabilities and Strengths Inherent in Standards-Based Education

Over the past decade, early learning standards have been widely adopted by all the 50 U.S. states and in many countries (i.e., U.K., Australia, Singapore, Taiwan, Korea); however their effect on early childhood education is still unclear (Scott-Little, Kagan & Frelow, 2003a). This is because the standards movement has brought both challenges and opportunities to the early childhood education. This section discusses the liabilities and strengths of integrating early learning standards into early childhood classrooms.

Standards-based education may have negative effects on young children and educators. For young children, early learning standards may diminish their learning opportunity when the standards are used as static evaluation guidelines. For example, if children do not achieve expected standards—particularly children with disabilities, or culturally and linguistically diverse children—they may be labeled as failing students. Because they have “failed”, they may be held back a year or denied access to kindergarten or elementary school (Head, 2010; Kagan, & Scott-Little, 2004; NAEYC

and NAECS/SDE, 2002; Scott-Little, Lesko, Martella, & Milburn, 2007). This type of "failure" experience can harm to children's sense of self-efficacy and result in long-term emotional stress.

For educators, early learning standards may limit their flexibility in designing curriculum (Vars, 2001). In order to ensure that every child meet standards, early childhood educators may limit their teaching to the knowledge and skills that are addressed in the standards. Thus, the standards drive early childhood curricula toward a more rigid, narrow, skills-driven approach (Scott-Little, Kagan, & Frelow, 2003a), and restrict teacher autonomy. This may limit depth and breadth of early childhood curricula (NAEYC and NAECS/SDE, 2002; Scott-Little, Lesko, Martella, & Milburn, 2007). Furthermore, educators often struggle to meet multiple sets of standards (Head, 2010). For example, a preschool teacher in Wisconsin may need to meet the expectations established by the Head Start program (i.e., The Head Start Child Development and Learning Framework), the State (i.e., the Wisconsin Model Early Learning Standards), a mandated literacy program (e.g., Early Reading First), and programs for children who have disabilities (e.g., Office of Special Education Programs Child Outcomes). This results in teachers spending inordinate amount of time understanding multiple sets of standards and having little time for daily instruction. Implementing standards can lead to an increased workload for educators (Day, 2002) and teachers report experiencing stresses (Gallant's, 2009).

In addition, standards-based education has challenged beliefs widely supported in early childhood education (Kagan & Scott-Little, 2004). It is commonly accepted that the development of preschool children is often uneven and erratic (Scott-Little, Kagan, & Frelow, 2003a). In other words, every child has different trajectories and abilities

determined by their backgrounds and experience (Copple, & Bredekamp, 2009). Some children are likely to show little progress in a given developmental area for a long period of time but then unexpectedly appear to acquire skills overnight (Scott-Little, Kagan, & Frelow, 2003a). However, early childhood educators need to ensure that children from diverse backgrounds acquire the same skills and knowledge as children from more privileged communities. Standards have challenged the belief in respecting and accommodating individual differences and needs (Copple, & Bredekamp, 2009; Cress, 2004; Essa, 2008). Early childhood educators have also maintained that children learn through play (Kagan, Scott-Little, & Frelow, 2009). Many early childhood professionals are concerned that the experiential play approach is likely to be replaced with a more academic approach (Kagan, Scott-Little, & Frelow, 2009; Rose, 2012) and that the new standards-based approaches will decrease children's play time (Drew, Christie, Johnson, Meckley, & Nell, 2008) while increasing time for adult-centered instruction, which is not considered developmentally appropriate (Copple, & Bredekamp, 2009).

At the same time, a standards-based curriculum has been described as having a positive influence on young children, educators, and the quality of early childhood education. First, recent research has indicated that children are more capable of learning than previously thought and their early learning experiences have a significant influence on their future success (Scott-Little, Lesko, Martella & Milburn, 2007). Early learning standards describe foundational skills and knowledge for children's early learning and their later academic success (Kendall, 2003; Scott-Little, Kagan, & Frelow, 2003a). When educators ensure that all children acquire the essential skills and knowledge articulated in the standards, they improve children's school readiness and prepare them for success at subsequent educational levels (Head, 2010; NAEYC and NAECS/SDE,

2002).

Second, learning standards can help teachers communicate with parents. Standards create a common language that includes parents and teachers (Wisconsin Department of Public Instruction, 2014). Standards encompass all the major areas of child development and can be used to guide conversations between teachers and parents (Oliver, & Klugman, 2006). Educators and parents can maintain improved communication through concrete reporting on children's progress based on standards-based assessments (Bowman, 2006; Brown, 2007).

Moreover, early learning standards can support educators' teaching (Scott-Little, Lesko, Martella & Milburn, 2007). Early learning standards describe a wide range of knowledge, skills, and habits that are important for children's learning, and educators can use this information to analyze and modify the activities that they teach. Educators may also reference the standards to design future curriculum plans (Cheng & Hsu, 2013).in addition, the standards can improve co-teachers' communication and partnership (Cheng & Hsu, 2013). Evaluating children's performance relative to the same set of early learning standards creates a space for partner teachers to share observations. When teachers' assessments differ, discussing the reasons for these differences enables partner teachers to examine their teaching approaches. Furthermore, via ongoing attendance at standards-related training programs, workshops, and seminars, educators can share and exchange ideas and best practices (Chin, 1996; Head, 2010; Oliver, & Klugman, 2006).

Finally, early learning standards can encourage the development of a more equitable education environment (McClure, 2005). One impetus to applying early learning standards is to ensure every child is ready to learn and ready for school (Goals 2000: Educate America Act, 1994). Early learning standards describe knowledge and skills that

are fundamental to children's future success. Early childhood programs are expected to provide children with learning opportunities so that they can acquire essential knowledge and abilities (Scott-Little, Lesko, Martella & Milburn, 2007). Because early childhood programs are encouraged to provide every child equal access to adequate learning experiences (Chin, 1996), ideally, all children, especially those from disadvantaged backgrounds, can have equal opportunities to be academically successful. Early learning standards therefore help to address the racial and economic inequities embedded in educational systems (Scott-Little, Lesko, Martella & Milburn, 2007). In addition, early learning standards can be used as the basis for program evaluation and to examine program quality (Head, 2010; Scott-Little, Lesko, Martella & Milburn, 2007). The standards are often considered to be a foundation for building high quality programs (NAEYC and NAECS/SDE, 2002; Oliver, & Klugman, 2006).

While concerns about standards-based education have been raised, researchers argue that these concerns can be reduced and minimized if the standards are appropriately implemented. Suggestions have been proposed for policymakers and early childhood practitioners. For example, the National Association for the Education of Young Children (NAEYC) and the National Institute for Early Education Research (NIEER) suggest that if educators recognize and respect individual differences when using standards, challenges inherent in standards-based approaches can be minimized (Copple, & Bredekamp, 2009; NAEYC and NAECS/SDE, 2002). Bodrova, Deborah, and Shore (2004) suggest that early learning standards should be comprehensive and allow flexibility to teachers. They also note that standards should not be designed simply for accountability. Policymakers and educators must consider how early learning standards can support curriculum and child development and learning. For example, policy makers

and educators must consider how the standards can be used to enhance public understandings of child growth and learning, and improve children's transition to Kindergarten or first grade.

These suggestions remind policymakers and early childhood practitioners about how to reduce potential harm to children as they effectively implement early learning standards in teaching practices. These suggestions also reveal the important role of teachers and policymakers in the implementation of early learning standards. For example, whether or not educators are sensitive to children' diverse backgrounds and adjust curriculum accordingly influences children's' learning of the skills and knowledge addressed in the standards. As Chin (1996) argued, the power of early learning standards is dependent on how people use them. It is what people "do" with the standards that makes the standards become a powerful vehicle for improving early childhood education. This explains why this research project focuses on exploring teachers' role in implementing early learning standards in their classrooms. Many studies have identified teacher as one of the major factors that influence the effectiveness of educational policies (Day, 2002; Fang, 1996; Sverdlov, Aram, & Levin, 2014). These studies suggest that teachers' beliefs and teaching practices are closely related. Studies that explore teachers' beliefs and their implementation related to early literacy are discussed in the next section.

Teachers' Beliefs and Implementation related to Early Literacy

The connections between teachers' beliefs and their implementation of the standards have been identified (Harris, 2012; Hauser-Cram, Sirin, & Stipek, 2003). For example, Harris (2012) examines how middle school teachers with varying expectations implement learning standards and design curriculum. This study shows that teachers' expectations affect the degree to which standards are taught. Harris found that teachers who have low

expectations of students tend to target simpler and more basic standards. This tendency perpetuates the inequality for children. Hauser-Cram, Sirin, and Stipek (2003) surveyed how kindergarten teachers rated children from low-income families (n=105) relative to their academic competence. They asked teachers' beliefs about parents. The result shows that teachers who perceive value differences between teachers and parents tend to rate their students as incompetence.

In order to gain a better understanding of associations between teachers' beliefs and their use of learning standards, the next section addresses (1) teachers' beliefs about early literacy (2) teacher' challenges in teaching early literacy, and (3) factors that influence teachers' beliefs and implementation related to early literacy.

Teachers' Beliefs about Early Literacy

Teachers' literacy beliefs have multiple dimensions. For example, beliefs can be categorized into two categories: beliefs about subject matter and beliefs about pedagogy (Lim, 2010). *Beliefs about subject matter* address the content of early literacy and whether early literacy relates to grammatical rules, phonological rules, or making meaning. *Beliefs about pedagogy* address teachers' beliefs about how to support children to learn to read and write. It concerns the art of teaching and how ideas are best delivered and presented in order to be comprehensible to students (Shulman, 1986).

Abbott-Shim, Lambert, and McCarty (2003) and Mather, Bos, and Babur (2001) categorized teachers' beliefs about literacy into two theoretical approaches: code-based instruction and meaning-based instruction. The former focuses on improving children's ability to decode the print and acquire skills such as letter identification, awareness of the sounds in words (i.e., phonemic awareness) and sound-symbol correspondence (Abbott-Shim, Lambert, & McCarty, 2003; Mather, Bos, & Babur, 2001). The latter

emphasizes how children learn to read and write in meaningful ways and contexts, and focuses on teaching meaning-related skills including oral language and vocabulary. For example, meaning-based instruction promotes: learning to decode a new word using context; not teaching basic skills in isolation; using context clues (syntax and semantics) to learn to read (Abbott-Shim, Lambert, & McCarty, 2003; Mather, Bos, & Babur, 2001).

Lim (2010) identified four types of early literacy beliefs. She examined 30 Singapore preschool teachers' beliefs about early literacy. She adopted Q-methodology to analyze teachers' beliefs about subject matter, pedagogy, and curriculum. She provided teachers with 62 statements about early literacy and asked them to sort these statements in terms of their level of agreement. Lim identified four types of early literacy beliefs: child centered pedagogy, communicative development, child development, and emergent literacy. Teachers who are categorized their beliefs relative to child centered pedagogy emphasize the importance of supporting children's interests. They argue that teachers should design curriculum based on children's interests rather than closely following textbooks. They disagree with asking children to sit quietly, listen to teachers, and do worksheets. A second type of early literacy beliefs relate to children communicative development. Teachers who subscribe this viewpoint were concerned about developing student confidence in speaking English. They argue that it is necessary to provide activities that allow interaction with others as children learn to listen and speak. They emphasize learning in meaningful contexts and attention to children's interests. Hence, they reject using textbooks. This group of teachers also emphasizes the role of families. They argue that teachers need to share strategies with parents to support learning at school.

The third category of teachers' beliefs highlights child development. Teachers in this

group support developmentally appropriate practices. These teachers are concerned about how children develop dispositions including self-control, confidence, and enjoyment of learning in developmentally appropriate ways. They disagree with using worksheets and asking children to write letters using correct strokes. Although child centered pedagogy and child development are similar, the former focuses on teachers' roles while the latter stresses on children's dispositions including their enjoyment for learning and confidence.

Teachers in the fourth group—emergent literacy—focus on evidence of reading and writing development. Teachers view children's mark-making and pretend reading as evidence of early literacy abilities. These teachers believe that children with these signs of early literacy can be viewed as successful readers and writers. They disagree that children must correctly spell words or read stories. In addition, they reject the idea that children learn better when they work together, and argue that teacher support is often more helpful than peer support. Children with weaker abilities tend to ask children with stronger abilities for help rather than attempting challenging tasks. However, children with weaker abilities tend to work harder with teachers' assistance.

In brief, teachers' beliefs generally relate to two dimensions: beliefs about subject matter and beliefs about pedagogy. I focus my analysis on these two dimensions when examining teachers' beliefs about early literacy learning. In addition, the existing research suggests that teachers think differently about early literacy. This research project examined this assumption through surveys and case studies to explore how teachers perceive literacy-related standards differently. I described different types of literacy beliefs in Chapters 5 and 6.

Teachers' Challenges in Teaching Early Literacy

Given that the goal of this research project is to explore teachers' implementation of

the WELLS, below I present studies that discussed teachers' difficulties in teaching early literacy. Gallant (2009) surveyed 229 kindergarten teachers in Michigan to explore major challenge they encounter in teaching literacy. Teachers were asked to explain the issues they identified on an open-ended questionnaire. Three challenges were highlighted. These challenges were directly or indirectly resulted from the requirements for teachers to incorporate early literacy learning standards in their classrooms.

First, teachers who worked at half-day programs experienced pressure and frustration because they were required to address the same curricular goals and ensure that children achieve the same learning outcomes as teachers who worked at full-day programs.

Second, over 40 percent of the participating teachers reported that they had little flexibility in regard to making curricular decisions and were required to meet particular requirements. They used words like *forced* and *required* (Gallant, 2009).

Third, teachers experienced tension between curricular mandates and their beliefs about developmentally appropriate practices (Gallant, 2009). Almost all respondents (227 out of 229 teachers) argued that the Michigan Benchmarks were not developmentally appropriate and not achievable by most of their students. Teachers even suspected that the policymakers who developed these benchmarks did not have an awareness of child development because the content of the benchmarks were skills traditionally covered in first grade.

To address these challenges, teachers identified resources that could benefit their literacy instruction including workshops, conferences, opportunities to talk with other kindergarten teachers, and opportunities to observe in kindergarten classrooms (Gallant, 2009). Teachers also suggested topics for literacy professional development. These topics

were either related to current teaching approaches--including guided reading, phonics instruction, using children's literature, developmental writing techniques, and interactive writing—or state and national policies such as the influences of NCLB on kindergarten and support in developing appropriate teaching activities, benchmarks, and standards.

In short, this study (Gallant, 2009) reveals that some teachers feel stressed and frustrated when teaching early literacy in their classrooms. Teachers reported that their literacy instruction was affected because implementing learning standards limited their flexibility in regard to making teaching decisions. They disagreed with the standards because the content of standards did not align with their beliefs about developmentally appropriate practices. They also pointed out that program factors (i.e., full-day or half-day program) affected the amount of time available for their literacy teaching. These teachers suggested that attending certain kinds of early literacy related professional development programs would facilitate their use of literacy standards. These findings reveal that exploring teachers' experiences of using the standards helps to understand teaching challenges as they implement the standards. Reflecting on these challenges creates opportunities to improve the development of the standards and better support children's literacy learning. In this research project, I described teachers' experience of using the WELLS and their suggestions to improve the WELLS.

Factors that Influence Teachers' Beliefs and Implementation Related to Early Literacy

In addition to exploring teachers' difficulties in teaching early literacy, some scholars have identified factors that influence teachers' literacy beliefs and instruction. These factors can be categorized as either teacher-background factors or program (school-characteristic) factors.

Teacher-background factors include teachers' years of teaching and culture of backgrounds. In terms of years of teaching experiences, Mather, Bos, and Babur (2001) studied the literacy instructional beliefs of two groups of teachers: preservice teachers (n=293) and inservice teachers (n= 131). They found that inservice teachers tended to use code-based instruction rather than meaning-based instruction. Similar results were found in Wen, Elicker, and McMullen's study (2011). They found that teachers who had more professional training and more teaching experience tended to have teacher-directed learning beliefs rather than child-centered learning beliefs.

Program factors include preschool entry age and school types (e.g., full-day or half-day program). In relation to preschool entry age, Gallant (2009) reported that preschool entry age influenced the effectiveness of educational policies. Teachers believed that the preschool entry age in Michigan was too early that children were not physical and intellectually mature enough for learning to read and write. In terms of school characteristics, Gallant (2009) found that school characteristics such as half-day or full-day programs and the number of children served in classrooms influence teachers' beliefs about early literacy. As discussed above, Gallant (2009) reported that teachers who worked in the half-day program were concerned about not having enough time to cover required curricular. In addition, over 75% of the participating teachers taught a large class size, between 24 and 29 children. These teachers expressed a difficulty in supporting every student's needs and meeting curricular requirements. They needed more staff to support students' learning.

Gallant (2009) also identified additional factors that influenced teachers' literacy instruction. Teachers were asked to rank factors according to how much they influenced teachers' decision making. Factors that influenced instruction the most and the least were

identified. Over 75 percent of respondents reported that *state and federal mandates,* and the *availability of materials* profoundly influenced their teaching. About 70 percent of respondents reported that *child's preschool experiences, first grade expectations, classroom-based tests, changes in the teaching profession, and societal changes in the family* were the most influential factors on their teaching. The lowest ranked influences reported by about 30 percent of respondents include *local boards of education, superintendents,* and *undergraduate courses.*

In short, factors that may influence teachers' literacy beliefs and instruction include years of teaching experiences, culture of teachers' backgrounds, the length of program, availability of teaching materials, entry age in preschool, changes in the teaching profession, societal changes in the family, federal mandates, children's preschool experiences, first grade expectations, and classroom-based tests. Information regarding these factors was collected during the research. For example, I ascertained teachers' years of teaching experiences, school types, and the socioeconomic status of families in surveys. In addition, I attended to these factors while analyzing the data collected in the case studies because these aspects might explain the connections between teachers' beliefs and their use of the WELLS.

Conclusion and Discussion

In conclusion, this chapter presents (1) the content of U.S. state early literacy learning standards, (2) the liabilities and strengths inherent in standards-based education, and (3) teachers' beliefs and implementation related to early literacy. This chapter reveals that each state has developed its own early learning standards and these standards differ in how they define what children should learn and do in their early lives (Scott-Little, Kagan, Frelow, Nalley, DeMeester, & Call, 2005; Scott-Little, Kagan, & Frelow, 2003a&

2006). While learning standards can guide curriculum design, instruction, and evaluation, a few studies have indicated that some important skills and knowledge that are strongly predictive of children's future success in reading ability were not addressed in some standards documents (Scott-Little, Kagan, and Frelow, 2006). This finding suggests teachers' essential role in evaluating and recognizing the insufficiency of the standards based on their professional knowledge and experiences to ensure children's learning quality. In addition, researchers have indicated that standards-based education can bring both benefits and harms to early childhood education (Copple, & Bredekamp, 2009; Cress, 2004; Essa, 2008; Head, 2010; Kagan, & Scott-Little, 2004; NAEYC and NAECS/SDE, 2002; Scott-Little, Lesko, Martella, & Milburn, 2007). The effectiveness of the standards relies on how the standards are implemented in classrooms. It is widely accepted that teachers' role is the main factor that influences the successful implementation of any educational policy including policies related to early literacy learning standards. When teachers express a belief in the value of a specific educational policy, they will be more likely to attempt to integrate the policy into their teaching practices. If teachers find conflicts between their educational beliefs and a policy, they may experience a lack of enthusiasm for implementing the policy despite being required to do so (Day, Elliot, & Kington, 2005). That explains why teachers' beliefs and actions are identified as the foci of this study. This research project explored relationships between teachers' beliefs and their use of the Wisconsin Early Literacy Learning Standards (WELLS) in their classrooms.

Another goal of this research project was to describe Wisconsin early childhood teachers' literacy beliefs and practices related to the WELLS. Researchers reported that teachers think differently about early literacy (Abbott-Shim, Lambert, & McCarty, 2003;

Mather, Bos, & Babur, 2001; Lim, 2010) and multiple factors influence their beliefs and literacy instruction (Gallant, 2009; Wen, Elicker, & McMullen, 2011). Through exploring teachers' experiences of using the WELLS, I identified patterns of literacy beliefs and factors (specifically program factors) that influenced their implementation of the WELLS.

In the next chapter, I describe methodology used in this research project.

Chapter 3 Methodology

This research project uses a mixed-methods approach that combines a survey-research method and multiple-case studies. I explore associations between early childhood educators' beliefs about literacy, literacy practices, and their decision-making processes of the Wisconsin Early Literacy Learning Standards (WELLS). The goal of this research project is to address four research questions:

1. How are early childhood educators' previously reported beliefs about children's literacy learning associated with their first formal encounter with and responses to literacy learning standards?
2. Subsequent to early childhood educators' formal introduction to literacy learning standards, to what extent and in what manner are the concepts and priorities reflected in those standards expressed in teachers' reported practices?
3. How do early childhood teachers retrospectively describe their experiences of evaluating and implementing/not implementing a new set of literacy learning standards in their classroom?
4. To what degree does the strength of teacher agreement with WELLS-recommended practices relate to the frequency with which teachers report engaging in those practices?

Survey data were used to respond to Research Questions 1, 2, 3 and 4; while case study data were used to respond to Research Questions 1, 2, and 3.

This chapter presents five sections. The first section describes features of a mixed-methods approach, a survey-research method, and multiple-case studies, and explains why these methods are viable means to explore the research questions. The second section describes participants, data sources, and data collection processes for this

research project. The third section presents my analytic methods. The fourth section discusses how my positionality frames my work as a researcher. Lastly, I describe the structure of findings chapters.

A Mixed-Methods Approach

A mixed-methods approach that combines a survey-research method and multiple-case studies is used to explore the research questions. Mixed-methods approach recognizes "the importance of traditional quantitative and qualitative research but also offers a powerful third paradigm choice that often will provide the most informative, complete, balanced, and useful research results" (Johnson, Onwuegbuzie, & Turner, p.129, 2007). Adopting a mixed-methods research design presents four advantages. First, the data collected from survey research and case study research is complementary. Survey research provides large numbers and numerical information on the studied issues; while case study research--which includes teacher interviews and classroom observation--illustrates contextual, in-depth, and multi-dimensional descriptions of the issues. The two types of research designs complement each other. For example, survey research method restricts the ways that participants can respond to the research questions. Only gathering numerical data fails to provide contextual information. Hence, I may not be able to document and examine dynamic interactions between teachers' beliefs about early literacy, their literacy practices, and their use of the Wisconsin standards. On the other hand, the case study research method is usually limited to a single or a few individuals and hence is unable to provide a statistically credible overview of the studied issues. Given the novelty of the research topic, patterns of early childhood teachers' uses of literacy standards in relation to their literacy beliefs remain to be explored. Using the survey research design enables the exploration of statistically significant patterns of the

studied topics and helps the researcher understand where the chosen cases are positioned within these patterns.

Second, information gathered through case study research informed my revision of surveys. In this research project, in order to develop surveys with a high degree of face and content validity, I used the information collected during the case study research to revise the surveys. For example, based on the feedback received from case study teachers, I changed the wording of survey items and headings. For example, one of the case study teachers suggested that I could change the wording of a survey heading from "frequency of related instruction" to "frequency of related instruction and activities" to expand the definition of teaching practices. Another case study teacher suggested adding a statement "please select your answers based on your expectations for the group of children that you are currently working with and based on the teaching practices in your current classroom" to make sure that teachers would not use their previous experiences to respond to the survey questions. In this way, I could more precisely document teachers' reported teaching beliefs and practices, and make a better interpretation of the collected data.

Third, case study research enables the researcher to gain a holistic and in-depth understanding of issues within the real-life contexts (Zainal, 2007). I was hence able to explore the complex and dynamic associations between teachers' beliefs, reported practices, and their use of the Wisconsin standards in the real early childhood settings. Moreover, by collecting and comparing multiple case studies, I was able to identify the patterns that emerged in the different cases (Zainal, 2007). Together with the data collected from all other sources, I was able to generalize some findings to a larger population.

Fourth, data collected from multiple sources provides methodological triangulation

(Stake, 1995). Since survey research and case study research provide different types of data to respond to the same issues, this design increases my confidence in how I interpret the collected data. Information collected through both research designs enriches my understandings of the research questions.

Survey Research Design

Survey research is a method of collecting information from members of a group; it aims to describe one or multiple characteristics of the broader population (Check & Schutt, 2012; James, F. B & James, J. B., 2011). This research project collects data from Wisconsin early childhood teachers to examine their beliefs about literacy and their reported literacy practices.

In general, survey research can include questionnaires, semi-structured interviews, scripted interviews, and observations (James, F. B & James, J. B., 2011). In this research project, survey research refers to questionnaires used to address my research questions. Two types of questions--close-ended and open-ended questions—are used in the surveys. The former offers explicit response choices while the latter offers space for respondents to express their views in their own words (Check, & Schutt, 2011). The survey portion of this research project primarily uses close-ended questions with multiple-choices and Likert-scale formats, as well as a few open-ended questions.

I use survey method to gather information on participants' beliefs about children's literacy learning, early learning standards, their use of standards, and their literacy practices. Using a survey research design has two advantages. First, I can collect data from a large number of respondents representing my targeted population on a particular issue. By using inferential statistics, I am able to identify statistically significant patterns in teachers' responses to Wisconsin early childhood teachers in conjunction with their

literacy beliefs and teaching practices. Second, I can use statistical techniques to focus on numerical summarizations—such as incidence, the distribution of variables, and relationships between and among variables--that might be undetected by other methods (e.g., case study research method).

However, using only a survey research design to respond to Research Questions 1, 2, and 3 is insufficient. I revised my survey items based on information collected through interviews and observations of case study teachers. Because of this, the revised survey better reflects participants' actual concerns and thus is more valid. In addition, because surveys use consistently scripted questions, the results may not capture the complexity of participants' local contexts related to using learning standards. Therefore, I use a multiple-case studies design to address these limits.

Multiple-Case Studies Design

Multiple-case studies research, or collective case study, refers to a researcher investigating no less than two cases to study a phenomenon or issue. This type of research maintains the features of single-case study research, which allows a researcher to collect rich descriptions of the object of study and to gain a stronger understanding of the studied phenomena or issues. Since multiple-case studies examine multiple cases in the same study, they allow the researcher to compare similar and contrasting results among and across cases (Duke & Mallette, 2011).

Case-study design has four main characteristics. The first characteristic is that every study is bounded by what is included and excluded (Yin, 2009). For example, a case study can be the study of a classroom, a school, a child, or a teacher. Second, a case study research is *particularistic*, which means that the study focuses on a particular phenomenon, event, program, or person (Merriam, 1988). Third, a case study research is

descriptive; it contains intensive and holistic descriptions of the studied object (Merriam, 1988). The fourth characteristic is *heuristic*. A case study research improves a reader's comprehension of particular issues (Merriam, 1988).

In this research project, each case is bounded within each participating teacher's classroom. I use a multiple-case studies design to study the associations that teachers make about early literacy, reported classroom literacy practices, and their decision-making processes related to the Wisconsin Early Literacy Learning Standards (WELLS). By using a multiple-case study design, I am able to explore how different teachers think about and implement the WELLS in their classrooms. I am also able to depict dynamic interactions between teachers' beliefs and reported teaching practices. Moreover, information collected through these cases enabled the revision of the surveys. Based on teachers' reports and my observations, I was able to redesign survey questions that better captured teachers' beliefs and instructional practices regarding early literacy. Moreover, I was able to better interpret survey results based on what I have learned from case study teachers. For example, most of my case study teachers disagreed with using worksheets in the classroom. This result was consistent with survey findings. Since the case study teachers explained their reasons for not using worksheets in the classroom, I was able to better understand and interpret this survey finding. Therefore, I could complement the survey's numeric results with case-study's descriptive results.

Research Design

This section describes survey research participants, case study participants, the research process, and data sources. I first describe the participants and the recruitment process. I then present the data collection process, introduce each data source, and discuss how data sources were used to address the research questions.

Survey Participants

The purpose of this research project is to explore Wisconsin early childhood educators' literacy beliefs, classroom practices, and their use of the Wisconsin Early Literacy Learning Standards (WELLS). Wisconsin early childhood teachers who work at early childhood organizations and teach children between the ages of 2.5 and 5 were invited to participate in the survey research.

In this research project, I define early childhood organizations as those that serve two-and-a-half-to-five-year-old children (although some also serve older or younger children) and provide children with regular learning opportunities. Organizations that only provide drop-in care or emergency care were not included. In general, early childhood organizations can be categorized into two types. The first type is 4K and/or PK programs that include private or public elementary schools that are administrated by Wisconsin school districts. The second type includes childcare centers or preschools that are not administrated by any Wisconsin school districts. In order to understand Wisconsin early childhood teachers' experiences of the WELLS, I invited teachers from both types of organizations to participate in my study.

To recruit teachers who work at the first-type of early childhood organizations (i.e., 4K and/or PK programs of private or public elementary schools), I collected elementary school information through Wisconsin Department of Public Instruction's website (http://dpi.wi.gov/directories). I selected elementary schools that provided services to children aged between 2.5 and 5 and provided regular teaching instruction (either full-day or half-day programs but excluded family or summer-camp programs). There were 1076 public elementary schools and 543 private elementary schools that matched my screening criteria.

I sorted these schools by school district. Most school districts required the researcher to obtain their permission before recruiting their teachers and the process for obtaining permission from a single school district could take up to several months. Given the of limited amount of research time, I contacted those school districts that had at least six qualified private or public elementary schools with 4K or PK programs. A list of these school districts can be found in Appendix A. I contacted these school districts and gained their permission to conduct my study. I then contacted the approved schools and invited their teachers to participate in the surveys.

To recruit teachers who work at preschools not associated with school district, I contacted these schools using the information collected on the website of Wisconsin Department of Children and Families (http://childcarefinder.wisconsin.gov/Search/Search.aspx). Given that the purpose of this research project is to understand associations among teachers' experiences of the WELLS, their literacy beliefs, and classroom practices. I recruited both teachers—(1) who are WELLS-experienced and (2) who are non-WELLS-experienced.

In Wisconsin, teachers' experiences of the WELLS vary based on whether their school is part of the Young Star program. Childcare centers that take part in the Young Star program and have a publicized rating of 4 or 5 stars demand that their teachers use the WELLS to plan their curriculum in order to meet the evaluation requirements of the Young Star program. There are 411 licensed childcares or preschools that were rated as 4 or 5 stars. For the convenience of data collection, I contacted schools whose capacity was over 150 children because when schools have more children they generally have more teachers who could participate in my study. The list of Young Star schools contacted can be found in Appendix B.

Teachers who serve at childcare centers or preschools that are not in the Young Star program are more likely to not use the WELLS. There were 475 licensed childcares or preschools that did not participate in the Young Star program. Similarly, for the convenience of data collection, I contacted schools whose capacity was over 50 children because when schools have more children they generally have more teachers who could participate in my study. The list of non-Young Star schools contacted can be found in Appendix C.

Note that, based on the information collected from Wisconsin Department of Children and Families website, most preschools or childcare centers that participated in Young Star program had more children than those who did not. That was why I contacted Young-Star-participated schools whose capacity was over 150 children but non-Young-Star-participated school whose capacity was over 50 children.

Using the lists described above, I emailed the director of each school or childcare center to introduce my study and request their permission to distribute my surveys to their teachers. This invitation email contained a hyperlink to my surveys. Teachers who agreed to participate in the survey could click the hyperlink and respond to the survey. Using JavaScript, this hyperlink randomly directed survey participants to Survey B (see Appendix D) or Survey C (see Appendix E). Survey B collects numeral data about teachers' agreement levels on statements related to literacy standards and their frequency of implementing activities related to these standards. Survey C collects descriptive information on teachers' overall experiences of using the WELLS.

38 school districts and 298 childcare centers were contacted and invited to participate in the survey-research component (note: some schools or childcare centers on the lists described above were not contacted because their contact information was not

available online). 16 school districts and 14 childcare centers responded yes for participation. It is notable that since not all school districts or schools replied to the invitation email and the participation was anonymous, I could not accurately track which school districts and schools participated. There should be more schools and childcare centers participated in the surveys.

Ultimately, 204 early childhood teachers responded to the surveys. After deleting low-effort responses (e.g., responding to all the questions with the same response) and responses with missing data, 105 of the responses were complete and identified as valid (Survey B, n=90; Survey C, n=15). The response rate of surveys was not high (nearly 300 schools were invited and only about 200 teachers participated). Given that my topic is related to a state policy, it is possible that teachers might have had concerns about completing the surveys. It is also possible that early childhood directors were occupied by teaching and did not have time to complete the surveys. However, even if with a relatively low response rate, the numeric and descriptive information collected through the surveys still contributed to my understanding of Wisconsin early childhood teachers' beliefs and reported practices, which complements the information gathered through the case studies.

Based on survey participants' reported school characteristics, teachers worked in different types of schools including childcare centers (27%), Head Start (19%), and 4K programs in elementary schools (33%). Among the participants, 16 % of the teachers taught three-to-four-year-olds, 41 % of the teachers taught four-to-five-year-olds, and 25 % of the teachers taught three-to-five-year-olds. The other 18 % participants taught other age groups such as three-to-six-year-olds or two-and-a-half-to-three-and-a-half-year-olds.

In terms of reported family income, 46 % participants taught children from low

income families, 37 % taught children from middle income families, and the rest 17 % taught children from high income families. With respect to the percentage of English language learners in the classroom, 15 % of the participants taught classes with no English language learners (ELLs), 52% taught classes in which less than half students were ELLs, 3 % taught classes in which more than half students were ELLs, and 30 % taught classes in which almost all students were ELLs.

The analysis of participants' background experiences with early learning standards showed that: 94 % of the participants have used early learning standards in their teaching and have used the state early standards (i.e., WMELS). 78 % of the participants considered themselves familiar with the state early standards. 60 % of the participants used more than one set of English literacy learning standards and 72 % of the participants used the Wisconsin Early Literacy Learning Standards (WELLS).

Three surveys and their participants. In this research project, three surveys (Survey A, Survey B, and Survey C) were used to address the research questions. Survey A served as a pilot for Surveys B and C. The three surveys had similarities and differences in their purposes, their targeted participants, the survey structures, the types of questions, and the survey development and distribution.

Purpose and participants of Surveys A, B, and C.

In terms of the purposes, Surveys A, B, and C were designed to explore teachers' beliefs about early literacy and the Wisconsin Early Literacy Learning Standards (WELLS), and teachers' reported literacy practices. However, Survey A was only sent to case study teachers (n=4); Survey B was sent to both case study teachers and survey participants. Survey C was sent to only survey participants. More specifically, findings from Survey A were used to understand case study teachers' initial beliefs about literacy,

the WELLS, and their literacy practices before their formal encounter with the WELLS. These findings improved my understanding of case study teachers' literacy beliefs and practices, and enabled better interpretation of the data collected during later teacher interviews and classroom observations. In addition, it was sometimes difficult for teachers to articulate their literacy beliefs. Discussing case study teachers' responses to Survey A served as an effective way to initiate conversations.

Survey B was sent to both case study teachers and survey participants. I recruited two groups of teachers as survey participants—WELLS-experienced teachers and non-WELLS-experienced teachers. This design enabled the exploration of commonalities and differences related to their beliefs, experiences with early literacy standards, and their early literacy practices revealed by the two groups of teachers. Additionally, this design enabled me to explore associations among teachers' beliefs, teaching practices, and their experiences with using the WELLS. Moreover, since the four case study teachers responded to both Surveys A and B, I was able to examine change and continuity for the four case study teachers regarding their literacy beliefs and practices.

Survey C was only sent to survey teachers who had used the WELLS in their classrooms. Through the use of open-ended questions, Survey C was able to collect additional descriptive information related to teachers' overall experiences of using the WELLS, which helped address the third research question (i.e., how do early childhood teachers retrospectively describe their experiences of evaluating and implementing/not implementing a new set of literacy learning standards in their classroom). Data collected from the three surveys were used to complement each other in order to gain a better understanding of Wisconsin early childhood educators' beliefs and literacy practices regarding the WELLS.

Note that Survey C was used to collect descriptive responses about teachers' overall experience with the WELLS. Since one of the main purposes of this research project was to explore statistically significant patterns of Wisconsin early childhood teachers' literacy beliefs and classroom practices, I needed more participants for Survey B (which collects numeral responses) than Survey C. A special design was developed to meet this purpose. When survey participants agreed to participate in the survey research, they clicked a hyperlink attached in the invitation email. This hyperlink randomly directed these participants to Survey B or Survey C. Ideally, 75% of consenting teachers were directed to Survey B, and 25% of teachers were directed to Surveys B or C. For the 25% of teachers, if they reported yes to the question: I have experience using the Wisconsin early learning standards in my classroom, they were then directed to Survey C. If these teachers reported no to the question, they were then directed to Survey B. In other words, for the 25% of teachers, their reported experience of using the WELLS decided which survey (B or C) they were assigned. This design allowed me to collect more quantitative data (Survey B) than descriptive data (Survey C) in order to examine statistically significant patterns related to participants' literacy beliefs and practices. This design is illustrated in Figure 3.1.

Case-Study Participants

Four early childhood teachers from three early childhood programs participated in the case study portion. All the four case study teachers worked at non-profit childcare centers. Two of them had been working in the field of early childhood education for over 15 years (Debbie and Lori). The other two just began teaching preschool during the year of data collection (Charlie and Joyce). Detailed information about the four case study teachers' educational backgrounds and school characteristics can be found in Chapters 5

and 6. All names in this research project are pseudonyms.

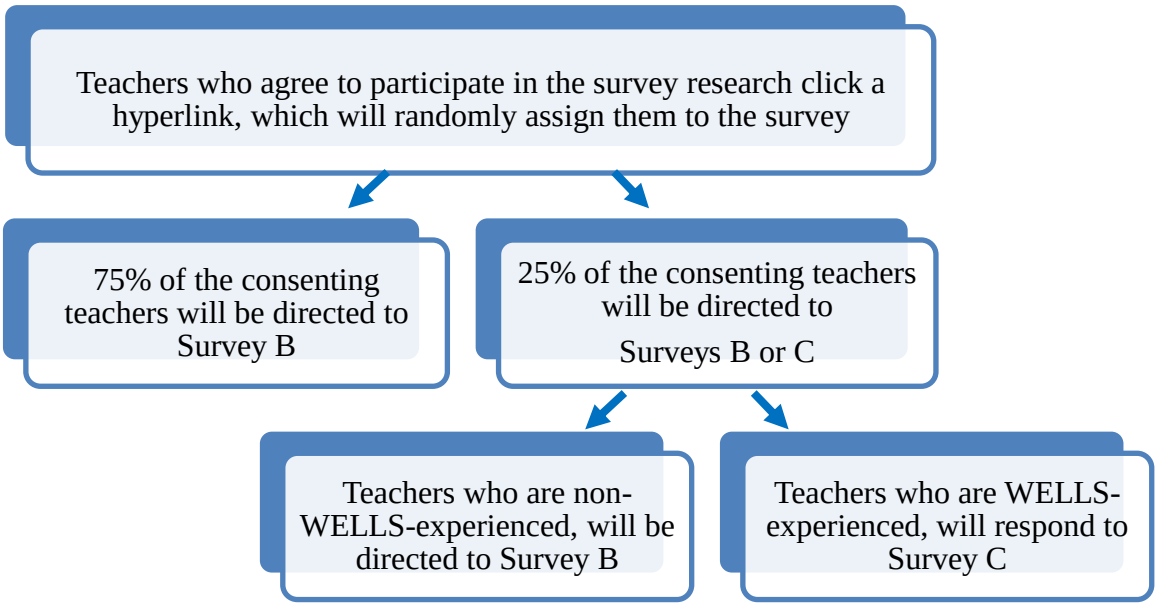

Figure 3.1. Surveys B and C distribution method.

I recruited the case-study teachers using a snowball sampling technique. I contacted directors and teachers I know and introduced my study to them. I inquired about their willingness to participate in my study and for any recommendations of teachers who might be interested. I then contacted these potential participants to invite them to serve as case study teachers. Note that some school districts required the researcher to obtain district consent before inviting their teachers to take part in the project. I contacted these school districts to obtain permission prior to recruiting their teachers.

Case study teachers met three criteria. First, since the main purpose of the study was to explore early childhood teachers' beliefs and teaching practices related to literacy learning standards, the potential participants needed to work with children aged between 2.5 to 5 and provide literacy related activities in their classrooms. Second, I sought case study teachers who had minimum knowledge of the WELLS. These teachers might have heard about the WELLS, but they had not read the WELLS document or applied the

WELLS in their classroom. Third, case study teachers needed to be interested in learning about the WELLS and applying the WELLS in their classrooms. By using these criteria, I was able to explore how teachers authentically responded to the WELLS before, during, and after their first formal encounter with the WELLS.

Research Process

This research project was approved by the Institutional Review Board (IRB) of University of Wisconsin-Madison in June, 2015. Recruitment and data collection for the case study research portion lasted about nine months ending in March, 2016. The data collection process for the survey research portion took approximately one year and I stopped recruiting survey participants in June, 2016.

I collected data from multiple sources including classroom observations, teacher interviews, teacher artifacts, photos, researcher's reflective memos, and surveys (A, B, and C). The research process is introduced chronologically below and illustrated in Table 3.1.

After spending three months recruiting case study participants, I obtained the four case study teachers' consent to participate in my study in October, 2015. Before the research project began, I met with each teacher and provided an introduction to my study and scheduled a classroom observation for the following week. While conducting the classroom observations, I personally handed parent-consent forms to students' parents or placed them in students' mailboxes in order to gain parents' permission to take photos of their child's literacy related artifacts. During the third week, I conducted the second classroom observation and then the first teacher interview. Immediately following the first interview, I distributed Survey A to the case study teachers. The case study teachers

Table 3.1

Data Collection Timeline

Process / Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Introduce this research project to case study teachers	■																			
Conduct classroom observations		1st	2nd				3rd			4th				5th				6th		
Collect teacher artifacts and take photos		■	■				■			■				■				■		
Conduct teacher interviews			1st		2nd			3rd			4th				5th					6th
Write my reflective memos		■	■		■	■	■	■		■	■			■	■			■		■
Distribute Survey A to case study teachers			■																	
Collect Survey A responses from case study teachers and analyze				■																
Introduce the WELLS to case study teachers						■														
Revise Survey A		■	■	■	■															
Recruit survey teachers	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Submit revised Survey A (i.e., Survey B) to IRB						■	■													
Distribute Surveys B and C and collect responses from survey teachers							■	■	■	■	■	■	■	■	■	■	■	■	■	■
Distribute Surveys B to case study teachers																		■		
Analyze Surveys B and C															■	■	■	■	■	■

were asked to complete Survey A after the first observation and before they were formally introduced to the WELLS to prevent the content of Survey A from affecting their literacy beliefs and their instructional practices. In this way, I could document teachers' initial beliefs about literacy and the WELLS. Survey A was retrieved one week after distribution and analyzed.

During Week 5, I conducted the second teacher interview. I discussed teachers' responses to Survey A and asked them to provide suggestions for revising the survey. Right after the interview, I gave each case study teacher the official Wisconsin Model Early Learning Standards (WMELS) book. I also provided each teacher a list of performance standards from the WELLS (i.e., the literacy standards in the WMELS) so that teachers could review this list and identify which literacy standard(s) they were interested in learning more about and using in their classrooms. This design provided the teachers time to become familiar with the WELLS before I formally introduced them to the WELLS.

During Week 6, I formally introduced the WELLS document to each case study teacher. By presenting and discussing a series of PowerPoint slides (see Appendix F), I introduced the structure and purposes of the WELLS (see Chapter 4). The teachers then read the WELLS and chose a learning standard and activities that they were interested in implementing. The teachers were invited to select at least one of the four literacy standards presented in the WELLS, and 3-5 related activities. They were also asked to explain their choices. Teachers shared their plans for when and how to apply the chosen standards and activities in their classes. We also discussed the teachers' expectations and concerns related to the WELLS.

During Week 7, I conducted the third classroom observation to discern if there was any change in teachers' classroom literacy practices following teachers' formal encounter with the WELLS.

During Week 8 and the third teacher interview, I asked the teachers about their current understanding of the WELLS, and the WELLS performance standards and activities they implemented in their classrooms. I invited teachers to reflect on their implementation process and asked them if they wanted to choose different standards or activities. The teachers were regularly reminded across the study that they had the freedom to change their plans for using the WELLS. During Interviews 4, 5, and 6, teachers were asked to discuss their beliefs and practices about literacy.

I conducted the fourth classroom observation in Week 10 and conducted the remaining observations every three to four weeks. In addition, since the main purpose of classroom observations was to understand how teachers used the WELLS and adjusted their literacy practices, I photographed literacy related activities, child-created literacy products, and classroom environmental arrangements during each observation. These photos were used to facilitate interview conversations between me and the teachers.

During the 11th week, the fourth teacher interview was conducted. The remaining interviews were conducted every three to four weeks. In most situations, teacher interviews were conducted immediately following after or within a week of each classroom observation (except the last classroom observation since I needed more time to analyze the second survey). This design enabled me to discuss the findings of classroom observations soon after the observations were conducted. Additionally, at least one week before each interview, I provided case study teachers a hard copy of interview questions

so that they knew the foci of the upcoming interviews.

During Weeks 2 to 5, I used the information collected from teachers about Survey A and other data sources (e.g., teacher interviews, classroom observations, and reflective memos) to revise Survey A. This redesign enabled me to revise question items based on teachers' comments and to improve the validity of the survey. During the 6th week, the revised Survey A (renamed Survey B) was resubmitted to Institutional Review Board (IRB) for approval.

After obtaining IRB's approval for the revised Survey B during Week 7, I distributed Surveys B and C to survey participants. I distributed Survey B to the case study teachers after the 6th classroom observation (Week 18). During the last teacher interview in Week 19, we discussed similarities and differences between their pre and post responses to the survey. We also discussed case study teachers' overall experiences with using the WELLS. I provided the case study teachers with an overview document that showed the standards they chose and the literacy activities they provided in the classroom to help them recount their experiences. The data collection process for the case studies lasted nine months and occurred across two semesters. This allowed me to observe continuity and change of case study teachers' beliefs and practices over time.

Note that the timeline described above was slightly different for each case study teacher in response to his or her class schedule and individual preferences.

In order to recruit more survey participants, the duration of the survey research portion lasted longer than the case-studies. Hence, the survey recruitment and analysis process is not fully captured in the Table 3.1.

Data Sources

Data came from multiple sources, including three surveys (A, B, and C), classroom observations, teacher interviews, audio recording of teacher's response to the introduction of the WELLS, researcher's reflective memos, teacher artifacts, and photos of literacy related activities, environmental arrangements, materials, and child products.

These sources were analyzed and used to address the four research questions (see Table 3.2). Each research question includes several sub-questions and sub-domains. For example, in order to respond to Research Question One--how are early childhood educators' previously reported beliefs about children's literacy learning associated with their first formal encounter with and responses to literacy learning standards—I had to explore two sub-questions: (1) what are teachers' previously beliefs about children's literacy learning, and (2) how do teachers respond to the WELLS after formally encountering them. The first sub-question could be further divided into four sub-domains: what are teachers' beliefs about (1) early literacy, (2) literacy learning, (3) literacy standards (in general), and (4) the WMELS literacy standards.

The relationship between the four research questions and data sources is illustrated in Table 3.2. For example, I utilized data collected from Surveys A and B, the teacher interviews, classroom observations, teacher artifacts, and photos to respond to the first research question. I continue to describe each data source and data collection process.

Surveys. Three surveys were used in this research project—Surveys A, B, and C. In general, the three surveys contains different combinations of sections drawing on six categories of questions: (1) teachers' school and classroom characteristics, (2) teachers' reported experiences of using early learning standards, (3) teachers' beliefs about early

Table 3.2

The Relationships between Research Questions and Data Sources

Question	Sub-questions and sub-domains		Data source
One	Teachers' previous beliefs about children's literacy learning	Beliefs about early literacy	➢ Survey A ➢ Teacher Interviews 1 and 2
		Beliefs about early literacy learning standards (in general)	
		Beliefs about practices addressed by the WELLS	
		Literacy practice	
	First formal encounter with and response to literacy learning standards	Beliefs about practices addressed by the WELLS right after encountering them	➢ Audio recording of teacher's response to the introduction of the WELLS ➢ Teacher Interview 3
		Beliefs and literacy practices after encountering the WELLS	➢ Teacher Interviews 4, 5, 6 ➢ Classroom Observations 3, 4, 5, 6 ➢ Teacher artifacts such as teachers' lesson plans ➢ Photos related to literacy activities, child-created literacy products, environment, learning materials ➢ Survey B (case study participants)
	Connection between case study teachers' beliefs and literacy practices		➢ Teacher Interviews 1, 2, 3, 4, 5, 6 ➢ Audio recording of teacher's response to the introduction of the WELLS ➢ Surveys A and B (case study participants)

Table 3.2 *(Continued)*

Question	Sub-questions and sub-domains		Data source
Two	Concepts and priorities addressed by the WELLS		➢ Content analysis of the WELLS document
	Teachers' reported practices		➢ Audio recording of teacher's response to the introduction of the WELLS ➢ Teacher Interviews 3, 4, 5 ➢ Surveys B and C (participants with experience of using the WELLS)
	Teachers' observed practices		➢ Classroom Observations 3, 4, 5, and 6 ➢ My reflective memos ➢ Teacher artifacts such as teachers' lesson plans, teachers' reflective memos, and blank child evaluation forms ➢ Photos related to literacy activities, children's literacy products, literacy environmental arrangements, and literacy learning materials
Three	Teachers retrospectively describe their experiences of evaluating and implementing/not implementing a new set of literacy learning standards in their classroom	Experiences related to early literacy	➢ Last teacher interview ➢ Survey C
		Experiences related to literacy	
		Experiences related to the use of the WELLS	
		Factors that influenced the use of the WELLS	

Table 3.2 *(Continued)*

Question	Sub-questions and sub-domains		Data source
Three	Case-study teachers' beliefs and practices before using the WELLS		➢ Survey A (case study teachers) ➢ Teacher Interviews 1 and 2 ➢ Classroom Observations 1 and 2 ➢ Teacher artifacts
	Case-study teachers' beliefs and practices after being introduced to the WELLS		➢ Survey B (case study teachers) ➢ Audio recording of teacher's response to the introduction of the WELLS ➢ Teacher Interviews 3, 4, 5, and 6 ➢ Classroom Observations 3, 4, 5, and 6 ➢ Teacher artifacts (e.g., teachers' lesson plans and child evaluation forms)
	Comparison between case study teachers' beliefs and practices before and after using the WELLS		➢ Surveys A and B (case-study) ➢ Data collected in case studies before and after teachers' encounter with the WELLS
Four	Teachers with no experience of using the WELLS	Beliefs about practices addressed by the WELLS	➢ Survey B (teachers with no experience of using the WELLS)
		Literacy practices	
	Teachers with experience using the WELLS	Beliefs about practices addressed by the WELLS	➢ Survey B (teachers with experience of using the WELLS)
		Literacy practices	

literacy, (4) teachers' beliefs about early learning standards, (5) teachers' beliefs about the WELLS and their existing classroom literacy practices, and (6) teachers' overall experiences of using the WELLS in their classrooms. Surveys A and B address the first five categories; Survey C addresses Categories 1, 2, and 6. In order to increase the response rate for Survey B, survey participants were only asked questions in Categories 1, 2, and 5, which shortened the response time for the survey. However, case study teachers were asked questions in all the five categories in Survey B so I could compare their responses to Surveys A and B.

Question items on the surveys and their relationship to the research questions. The information collected relative to the six categories of survey questions helped to respond to the research questions. Category 1 collected school and classroom demographic information such as length of class, years of teachers' teaching experiences, children's family income level, and percentage of children who are English language learners in the classroom. Category 2 asked questions about teachers' familiarity and use of early literacy standards. The demographic information collected in the two categories helped me understand "who" responded to my surveys and revealed the diversity of my sample.

In addition, I was able to sort and compare responses based on school and teacher characteristics. For example, I could understand the number of teachers recruited from various types of early childhood organizations. In addition, this background information was used to contextualize teachers' reported beliefs about children's literacy learning and the WELLS, and teachers' reported literacy practices to address Research Questions One, Two, and Four.

Category 3 included statements about teachers' beliefs about teaching literacy, what

children should learn in early literacy classrooms, and how children learn early literacy skills and strategies. The information gathered in this category was used to understand teachers' beliefs about early literacy and to answer Research Questions One and Four.

Category 4 contained statements about the purposes and functions of early literacy learning standards. Teachers were asked to express their agreement level with set of statements. For example, teachers were asked to rate the strength of their agreement with statements such as "early literacy learning standards improve school readiness and to guide teachers' instruction." The information gathered in this category was used to understand teachers' existing beliefs about early learning standards and address Research Questions One and Four.

Category 5 referenced 26 literacy related expectations for children. About a half of the 26 statements were adopted directly from the WELLS, and other half (12 statements) were adopted from Lim's (2010) study. This allowed me to analyze teachers' literacy beliefs on two dimensions--*beliefs about subject matter* and *beliefs about pedagogy* (Lim, 2010). These expectations include "children should name all letters of the alphabet" and "children should learn to write with the correct strokes". Teachers were required to identify their level of agreement with WELLS-identified practices and the frequency with which they engage in those practices. For example, teachers were asked to identify their level of agreement with using worksheets and were then asked to indicate how frequently (e.g., once a week, once a month) they use worksheets in their classrooms. The information gathered in this category was used to understand teachers' literacy practices and address Research Questions One, Two, and Four. This information also enabled discussion of relationships between teachers' beliefs about the WELLS and their reported

literacy practices, which addressed Research Questions Two and Four.

Category 6 contained four open-ended questions, which allowed teachers to provide descriptions of their prior experiences using the WELLS, their attitudes toward the WELLS, and any changes that occurred as a result of using the WELLS. This information was used to address Research Question Three.

Types of questions used for Surveys A, B, and C. The first two sections of all three surveys (i.e., teachers' school and classroom characteristics, and teachers' experiences of using early learning standards) involved multiple-choice questions. All other sections of Surveys A and B enabled five-point-Likert-scale responses. Only the third section (Category 6, i.e., teachers' overall experiences of using the WELLS) in Survey C used open-ended questions, which allowed participants to describe their experiences of using the WELLS.

The development of Surveys A, B, and C. A draft of Survey A was created by drawing on similar studies (Hindman, & Wasik, 2008; Hsin, 2012; Lim, 2010; Mather, Bos, & Babur, 2001; Schott-little, 2003b; Wisconsin Department of Public Instruction, 2014). Before submitting the draft survey A to the Institutional Review Board (IRB), Survey A was examined by early literacy experts and teachers (n= 7) to adjust the organization and wording of questions, (i.e., to improve the quality of face validity). In addition, case study teachers' suggestions for Survey A and the data collected during the first 5 weeks of the case study research also informed revision of Survey A and the development of Surveys B and C.

Surveys A, B, C can be found in Appendixes G, D, E.

Survey distribution timeline and versions. Survey A was sent to only the case study

teachers during the 3rd week while Survey B was sent to the case study teachers during the 18th week. Surveys B and C were sent to survey participants after receiving reapproval from the IRB at approximately the 7th week.

In addition to a hard-copy version, all the three surveys have an online version that was created using survey software provided by the Qualtrics company. Case study teachers chose the version that worked better for them while all survey participants were sent a hyperlink to the online version.

A comparison of the three surveys is presented in Table 3.3.

Classroom observations. Classroom observations were conducted six times in each case study classroom. These classroom observations enabled the exploration of teachers' literacy practices and their decision-making processes about the WELLS. These observations supported my exploration of connections between teachers' reported beliefs about use of the WELLS and their actual use of identified WELLS standards. Although most of the time, this research project focused on teachers' reported instructional practices collected from the surveys and interviews, teachers' observed practices were used to (1) prompt interviews and (2) understand teachers' work environments (where literacy teaching happened) including teachers' interactions with other teachers. For example, I noticed that linking interview questions to what I witnessed during observations was an effective way to prompt conversations. I asked teachers why they implemented a particular activity that I observed and what the connection was to their use of the WELLS. Teachers usually provided detailed responses to my interview questions since they were familiar with the observed literacy activities.

Each observation lasted approximately 1.5 to 2 hours. This time frame allowed me

Table 3.3

Comparison among Surveys A, B, and C

	Survey A	**Survey B**	**Survey C**
Sections	(1) teachers' school and classroom characteristics, (2) experiences of using early learning standards, (3) teachers' beliefs about early literacy, (4) teachers' beliefs about early learning standards, (5) teachers' beliefs about early literacy learning standards and their existing classroom literacy practices.	(1) teachers' school and classroom characteristics, (2) experiences of using early learning standards, (3) teachers' beliefs about early literacy, (4) teachers' beliefs about early learning standards, (5) teachers' beliefs about early literacy learning standards and their existing classroom literacy practices.	(1) teachers' school and classroom characteristics, (2) experiences of using early learning standards, (3) teachers' overall experiences of using the Wisconsin Early Literacy Learning Standards in their classroom.
Participants	Four case study teachers	Four case study teachers completed all sections of Survey B; survey participants completed sections 1, 2, and 5.	Survey participants
Distribution	During Week 3	For survey participants, after Week 7 For case study teachers, after Week 18	After Week 7
Relationships	Survey A is a pilot for Surveys B and C. Surveys A and B have the same structure (i.e., have the same five categories of questions). The first two sections and question items in Surveys B and C are the same but Surveys B and C are differently structured (i.e., they have different amount of sections).		

to gain a better understanding of teachers' practices and to observe various literacy activities. I acted as a participant observer and utilized *moderate participation* (Spradley, 1980), which allowed me to interact with teachers and be involved in literacy activities while observing and recording what I observed in the class.

To address my research questions, I focused my observations on the following aspects of classroom practices:

- Types of literacy activities (e.g., reading storybook, phonetic activities, or writing),
- Duration of literacy activities,
- Pedagogical/teaching methods (e.g., child-centered pedagogy or adult-centered pedagogy),
- Types of learning materials provided or used during literacy activities (e.g., picture books, informational books, worksheets, posters, or crayons),
- Accessibility of learning materials,
- Classroom environment (e.g., learning area set-up, posters, or languages used in the classrooms),
- Child-created literacy products (e.g., journals, drawings, or worksheets),
- Children's responses to literacy activities,
- Evaluation methods used to assess children's literacy learning

An observation record form was created to document these observations (see Appendix H). The first two classroom observations were conducted during Weeks 2 and 3. Since I was new to the class, the first two observations were designed to build relationships with teachers and children, and to learn about classroom literacy routines such as the schedule of literacy activities,

number of children and teachers, and classroom environment. The first two observations also served to capture teachers' initial literacy practices before their formal exposure to a new set of literacy learning standards (i.e., the WELLS). In addition, the second classroom observation was used to augment and corroborate teachers' responses during the initial teacher interview.

During the 6th week, each teacher was introduced to the WELLS and invited to select at least one literacy learning standard to address in the classroom.

The third classroom observation was conducted during the 7th week after case study teachers completed Survey A and were formally introduced to the WELLS document. Since case study teachers were introduced to the WELLS, in the Week 7, the focus of classroom observations shifted from simply understanding teachers' literacy practices to exploring (1) their process for using the targeted WELLS standards, and (2) connections between teachers' beliefs about early literacy, literacy instruction, and their use of the WELLS. To arrange observations, I asked teachers' preferences about when to observe their class. Since the observation schedules were arranged in consultation with the case study teachers, they felt more comfortable with my visits.

In order to further document classroom literacy practices, I photographed literacy activities, learning environments, child-created literacy products, and literacy related artifacts during classroom observations. I only photographed the work of children for whom I had parental consent and I did not take photos of children. In addition, in order to protect participants, all names and other personal information were erased or removed from photos. Pseudonyms are used in this dissertation and elsewhere.

Teacher interviews. Case study teachers participated in six semi-structured interviews. Each

interview lasted approximately one hour. The frequency, number, and length of the interviews enabled me to continually document the teachers' beliefs about and use of the WELLS over time. Generally, teacher interviews are used to collect the following information:

1. Teachers' expectations for children's literacy learning
2. Teachers' beliefs about the Wisconsin Early Literacy Learning Standards
3. Teachers' reflections on their classroom literacy practices
4. Teachers' reflections on their decision-making processes for using the Wisconsin Early Literacy Learning Standards
5. Teachers' advice for revising the Survey A and the WELLS

The foci and timeline for the six teacher interviews are described below:

- The first teacher interview was conducted during the 3rd Week of the research period following the first and second classroom observations. This design enabled me to establish a baseline sense of teachers' literacy practices and hence better understand their responses to the standards. In addition, I used teacher artifacts collected and photos taken during early observations as memory stimuli to help teachers reflect on and recall what happened in their classrooms. Moreover, when I observed interesting events or had questions about my observations, I discussed these issues with teachers during interviews so that I would not interrupt their routines. The foci of the first interview were to understand teachers' initial beliefs about children's literacy learning, early literacy standards, and current literacy practices.
- The second interview was conducted during the 5th week after receiving case study teachers' responses to Survey A. I discussed responses to Survey A with teachers and I

asked their opinions about how to improve the survey in terms of the structure, format, wording, and the number of questions.

- During Week 8, after the case study teachers were formally introduced to the WELLS, I conducted the third teacher interview. The focus of the third interview was understanding teachers' experiences with implementing their selected WELLS standard and to explore their curricular plans. Teachers discussed the literacy activities they implemented following their formal introduction to the WELLS. In addition, we also discussed the first three classroom observations using photos taken during observations. These photos were related to literacy activities and included child-created literacy products, and teacher artifacts. I explored connections between teachers' beliefs about early literacy and the WELLS, and their use of the WELLS in their classrooms.
- The fourth and fifth interviews were conducted during Week 11 and Week 15. The fourth and fifth interviews continued to document teachers' beliefs about early literacy and the WELLS, and their use of selected standards from the WELLS. During each teacher interview, the teachers and I discussed my observation from the prior week.
- The last interview was conducted during the final week of the research period after receiving and analyzing their responses to Survey B. The foci of the final interview included: (1) teachers' responses to Survey B, (2) findings and questions related to the sixth classroom observation, and (3) the overall experience of considering and using a new set of literacy standards.

All interviews were audio recorded and transcribed. Interview protocols can be found in

Appendix I. I illustrate how each research question is addressed through corresponding interview questions in Appendix J.

Audio recording of teacher's responses to the introduction of the WELLS. I formally introduced the Wisconsin Early Literacy Learning Standards (WELLS) to the case study teachers during Week 6. The purposes of this meeting included: (1) to provide case study teachers with an opportunity to discuss the WELLS documents; (2) to briefly introduce the purpose and the structure of the WELLS document; (3) to discuss the concepts and priorities reflected in the WELLS and how these concepts or priorities were associated with case study teachers' current literacy beliefs and classroom practices; (4) to discuss case study teachers' initial responses to the WELLS including their expectations, suggestions, and concerns; and (5) for case study teachers to identify and target literacy standards and literacy activities that they planned to address in their classrooms. This meeting lasted about one hour and was audio recorded. Introductory slides (see Appendix F) were used during the introduction using the information presented in Chapter 4.

Researcher's reflective memos. I wrote reflective memos immediately following classroom observations and teacher interviews to ensure that the memories were still fresh. I wrote down questions and thoughts as I conducted observations and interviews. In addition, I highlighted observational insights and teachers' comments that related to my research questions. For example, I paid attention to change and continuity in teachers' literacy practices. I took notes as to whether or not teachers added new activities or learning materials, changed their teaching methods, and/or rearranged classroom learning environments. In addition, I noted consistencies and differences among teachers' beliefs about literacy and their literacy practices.

Photos. During classroom observations, I took photos related to literacy activities; children's

products including children's writings, drawings, and worksheets; literacy display arrangements including posters and learning centers; and literacy learning materials such as picture books and textbooks. These photos were used to document literacy events and instruction, and to elicit teachers' memories about classroom literacy practices.

I did not photograph children's faces and images. In order to protect children' privacy, I only photographed artifacts from children for whom I had parental consent. In addition, to protect all participants' privacy, I removed names or other clues that could be used to recognize children's identities from the photos. When teachers mentioned children's names, I used pseudonyms to protect their privacy.

Teacher artifacts. To corroborate and augment observations and interviews, I collected written, visual, and physical artifacts related to early literacy. For example, I collected documents that included teachers' lesson plans, classroom calendars and schedules, required curriculum handbook (e.g., the Creative Curriculum, 2001), other sets of standards (e.g., MMSD 4K standards), and blank child evaluation forms. These artifacts were used to understand teachers' classroom practices and to inform discussions during interviews.

Analytic Methods

This section describes how I analyzed (1) multiple case study data and Survey C and (2) Surveys A and B. See Table 3.4 for information on each data source and its corresponding analytic methods.

Analytic Methods for Multiple Case Study Data and Survey C

I used two coding methods to analyze the data collected from interviews, teacher artifacts, classroom observations, and open-ended questions (Survey C). These coding methods included

structural coding and evaluation coding. In the following paragraphs, I introduce each coding method, as described by Saldaña (2012), and explain how the specific coding method aided my exploration of the research questions.

Table 3.4

Data Sources and Corresponding Analytic Methods

Component of the study	Data source	Analytic methods
Case-study component	Teacher interviews transcripts	● Structural coding ● Evaluation coding
	Classroom observation field notes	● Structural coding
	Teacher artifacts such as classroom calendars	● Structural coding
	Researcher's reflective memos	● Structural coding
Survey component	Five-point-Likert-scale questions and multiple-choice questions in Surveys A, B, and C	● Descriptive analysis ● Correlation analysis ● Within-Person Z Score ● Multidimensional scaling
	Open-ended questions in Survey C	● Structural coding ● Evaluation coding

Structural coding. Drawing from MacQueen et al (2008), Saldaña (2012) argues that structural coding "applies a content-based or conceptual phrase representing a topic of inquiry to a segment of data that relates to a specific research question" (p. 84). In other words, structural coding is a "question-based" coding method that functions as an indexing-and-labeling device and enables the researcher to quickly access data in relation to the research questions (Saldaña, 2012). Since this method categorizes the data corpus in relation to each research question, it also enables the researcher to study comparable segments in terms of differences, commonalities, and relationships either for a participant or across all participants (Saldaña, 2012). This coding method was used to analyze interview transcripts, observation field notes, researcher's reflective

memos, teacher artifacts (i.e., teaching calendars, daily schedules) and open-ended responses for Survey C.

Provisional codes were created based on the study's theoretical framework, WELLS documents, and my research questions. Codes that were based on my research questions include--beliefs about early literacy, beliefs about literacy practices, beliefs about early literacy learning standards, beliefs about the WELLS, and teachers' literacy practices. Codes that were based on the WELLS documents include--literacy activities, learning materials, pedagogical or teaching methods, children's performance and response, and classroom environmental arrangements. Codes that reflect the study's theoretical framework include--- human capital, decisional capital, and social capital.

Evaluation coding. Evaluation coding logs data that relates to participants' judgments of a program or a policy (Saldaña, 2012). Evaluation coding can be applied to describe and compare participants' evaluation of the merit, significance, or worth of the WELLS document. Because this analytic method can be applied to describe the outcomes, effectiveness, or limits of the WELLS, it can lead to recommendation for future use of the WELLS. Provisional evaluation codes were created based on the research questions. These codes include teachers' positive and negative comments about the WELLS.

This coding method was used to analyze interview transcripts and open-ended responses to questions in Survey C.

In conclusion, for multiple-case study data and Survey C, I used structural coding and evaluation coding to explore themes and topics (see Table 3.4). I used structural coding to examine teacher interviews transcripts, observation field notes, teacher artifacts, my reflective

memos, and responses to open-ended questions from Survey C. I used evaluation coding to examine teacher interviews transcripts, and responses to open-ended questions from Survey C. A complete list of the codes can be found in Appendix K.

Analytic Methods for Surveys A and B

To analyze data collected in Surveys A and B, I conducted analyses including descriptive analysis, correlation analysis, Within-Person-Z-Score, and Multidimensional scaling. These techniques were used to address the following topics and to respond to Research Questions One, Two, and Four: (1) teachers' beliefs about early literacy and early learning standards, (2) teachers' reported literacy practices, (3) connection between teachers' beliefs about early literacy learning standards and their reported classroom literacy practices, and (4) case study teachers' responses to Surveys A and B. In addition, I used descriptive analysis to understand my survey participants' background information (i.e., their school and classroom characteristics and their experiences of using learning standards) and to know who had responded to the online surveys (see Table 3.5).

Descriptive analysis was used to describe the basic features of the data in the study. I used descriptive statistics including means, ranges, and numbers of valid cases, bar charts, and percentage to understand (1) school and classroom characteristics, (2) participants' responses related to their beliefs and reported literacy practices, (3) participants' background experience with using the WELLS, (4) participants' positive and negative attitudes toward each survey statement, (5) participants' reported frequency of implementation of particular literacy activities.

Surveys A and B adopted a five-point Likert scale. Within-Person-Z-Score (WPZ) was used to remove personal biases and standardize subject responses. Hsin and Price (2017) explained the need to recalibrate Likert-scale responses using WPZ:

> Individuals' questionnaire responses would also need to be thoughtfully recalibrated before proceeding with further analyses. Conventionally, researchers do not recalibrate Likert-scale responses. However, for our purposes, the conventional treatment of Likert-scale responses would obscure the information that we were seeking. Instead, we planned to attune the quantification of individuals' questionnaire responses to what Guttman and Suchman (1947) called "intensity function" (p. 60), Foa (1950) called "intensity analysis" (p. 207), Stephenson (1953) called "intra-individual 'significance'" (p. 48), and Price (1975) called "within-person Z scores" (p. 4). Within-person Z scores standardize each Likert-scaled item response with regard to the individual's across-questions mean and across-questions standard deviation. The recalibrated value of each item response thereby reflects the relative importance which each individual respondent gives to that item (relative to the other items). This approach to scaling, which requires painstaking case-by-case and item-by-item recalibration, gleans fundamentally different information from questionnaire responses. (Hsin and Price, 2017, page 5).

Correlation analysis was used to measure associations among early childhood teachers' agreement level with 26 literacy learning standards related statements and frequency of reported implementation of activities related to these standards. Pearson correlation coefficient was used to show whether and how strongly the 26 pairs were related.

I deployed multidimensional scaling (MDS) to find meaningful underlying literacy beliefs within a large data set through examining similarities between the investigated objects (i.e., the pairwise distance between surveyed subjects). In this research project, MDS is used to examine the similarities among 90 survey teachers' expressed level of agreement with 26 literacy

standards related statements and to detect meaningful dimensions to describe the data. A scatter plot was used to depict each survey and case study teachers' positions within the identified dimensions. MDS was utilized to (1) identify different literacy beliefs, (2) each case study teacher's literacy perspective, and (3) compare change and continuity in case study teachers' beliefs before and after formal introduction to the WELLS.

Table 3.5

Study Topics with Corresponding Statistically Analytic Methods

Study Topics	Data source	Analytic methods
School and classroom characteristics	Section 1 in Survey B	➢ Descriptive analysis
Background experiences of using early learning standards	Section 2 in Survey B	➢ Descriptive analysis
Case-study teachers' beliefs about early literacy	Section 3 in Surveys A and B	➢ Descriptive analysis
Case-study teachers' beliefs about early literacy learning standards	Section 4 in Surveys A and B	➢ Descriptive analysis
Beliefs about practices identified in the WELLS	Section 5 in Surveys A and B	➢ Descriptive analysis ➢ Multidimensional scaling
Teachers' reported literacy practices	Section 5 in Surveys B	➢ Descriptive analysis
Associations between teachers' beliefs and reported literacy practices	Section 5 in Surveys A and B	➢ Descriptive analysis ➢ Pearson correlation
Comparisons between case study teachers' beliefs before and after their use of the WELLS	Sections 3, 4, 5 in Surveys A and B	➢ Descriptive analysis ➢ Multidimensional scaling

In short, descriptive analysis, correlation analysis, and multidimensional scaling were used to (1) gain a better understanding of Wisconsin teachers' beliefs about early literacy and literacy standards, and their reported literacy practices, (2) understand relationships among teachers'

beliefs and their reported literacy practices, (3) support interpretations of case study data to address Research Questions One, Three, and Four, and (4) to provide methodological triangulation.

Positionality

This section describes how my background, experiences, and preconceived ideas influenced my role as a researcher in the study. First, most of my understandings about early childhood education have been cultivated in Taiwan where I studied as a college and graduate student, worked as a researcher, and taught as a preschool and elementary teacher. These experiences informed how I think about early childhood education, and influenced how and why I designed and conducted this research project. As a novice researcher in the field of early childhood education in the United States, my preconceived assumptions about early childhood education influenced my interpretation of what I observed during the research process in both supportive and challenging ways. For example, my experience of being a preschool teacher in Taiwan informed my understandings of U.S. teachers' possible concerns about literacy instruction. Meanwhile, these preconceived views inevitably became barriers to my perception and interpretation of what I saw during the research process. For example, I might subconsciously identify using textbooks and worksheets in preschools as developmentally inappropriate activities without considering the reasons or contexts that supported this curriculum design (e.g., parent's expectations, school tradition).

In addition, because English is my second language, I may have faced some challenges in communicating with my research participants, and understanding and interpreting their beliefs and teaching practices. In order to address this issue, I spent four years working and volunteering

at five different early childhood programs in the U.S. to observe, learn, analyze, rethink, and redefine what I have known and not known about early childhood education. In additional to increasing my understanding of the U.S. early childhood education, it is also important to remember that I must keep an open mind while conducting research. Instead of assuming that I know how to teach literacy in early childhood programs, I listened carefully to my participants and communicated with them to better understand their thoughts about early literacy and teaching.

Second, my previous research experience influenced the foci of this research project. As described in Chapter 1, I conducted a study to explore how early childhood educators in Taiwan applied a standards-based assessment in their classrooms. During the research process, I noted that teachers used the assessment in different ways based on their school's educational philosophy, their expectations for early childhood education, their educational backgrounds, their beliefs about best pedagogies, their beliefs about standards, and so forth. This research experience drew my attention to the importance of teachers' roles in influencing the effectiveness of the standards-based curriculum. I noticed potential connections between teachers' beliefs, teaching practices, and their implementation of a new educational policy. Hence, I focused this research project on exploring teachers' beliefs and classroom practices in relation to early literacy and learning standards.

Third, my presence might have influenced how teachers expressed their beliefs and reported practices. For example, my presence might have influenced teachers' interactions with their students and their students' responses to teaching. Additionally, my beliefs about early learning standards might also influence how I interacted with teachers and made sense of their responses

to my research questions. For example, I believe that learning standards could be used to improve school readiness and educational equity if users, including teachers and parents, implement them based on children's abilities and needs. This positive attitude toward learning standards influenced how I interviewed teachers and how I interpreted teachers' responses. Therefore, I had to be aware that learning standards might also bring negative influences to early childhood education. For example, teaching only standards might narrow children's learning experiences. In addition, when applying standards to practice, if teachers do not consider children's age, family backgrounds, and abilities, and force all children to acquire the same skills and knowledge on the same date, children who are not able to meet the standards could experience failure and develop low self-esteem.

The Structure of Findings Chapters

The data collected in surveys and case studies was analyzed to address the research questions. The findings will be presented in four chapters (4, 5, 6, and 7). As described below, Figure 3.2 illustrates the foci addressed in these chapters.

In Chapter 4, I analyzed the Wisconsin Early Literacy Learning Standards (WELLS) to understand how the WELLS is structured, and how many standards and sample activities are provided (illustrated as the green box with an arrow in Figure 3.2). The results found in this chapter were used to create introductory slides for case study teachers that I used to formally introduce this WELLS-based study.

Chapter 5 explores 90 survey teachers' literacy beliefs (a dimension of human capital) and classroom practices (a dimension of decisional capital) in relation to 26 WELLS related statements, and correlations between teachers' beliefs of the WELLS and their use of the WELLS

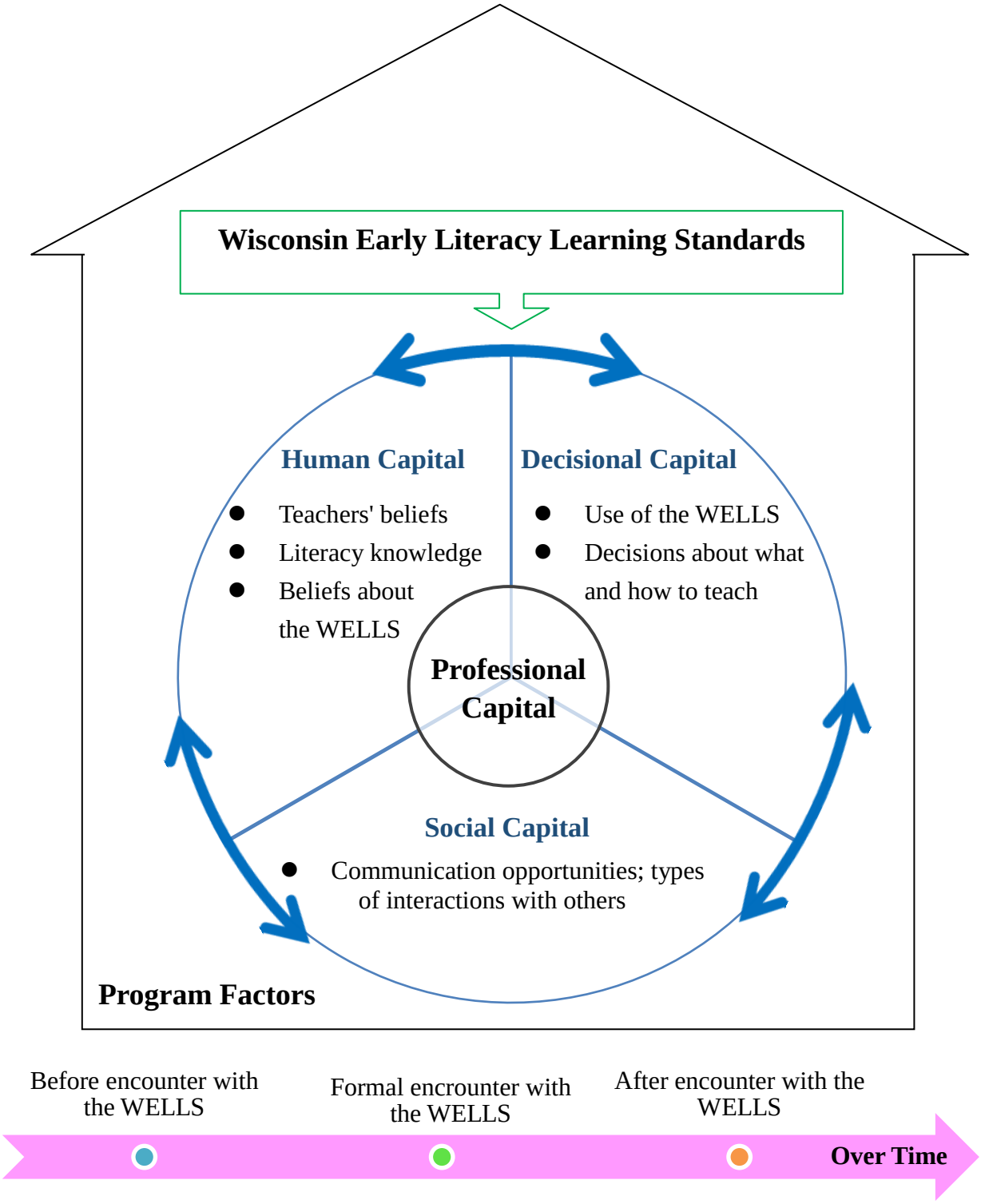

Figure 3.2. The foci of result chapters—WELLS, professional capital, program factors, and time.

(illustrated as the blue arrow between human capital and decisional capital). Chapter 5 addressed the second research question (i.e., subsequent to early childhood educators' formal introduction to literacy learning standards, to what extent and in what manner are the concepts and priorities reflected in those standards expressed in teachers' reported practices) and the fourth research question (i.e., to what degree does the strength of teacher agreement with WELLS-recommended practices relate to the frequency with which teachers report engaging in those practices).

Chapter 6 utilizes both numerical data (surveys) and descriptive data (interviews and classroom observation notes) to describe four case study teachers' literacy beliefs and their implementation of the WELLS. In additional to discussing patterns of case study teachers' literacy beliefs (a dimension of human capital) and reported classroom instruction (a dimension of decisional capital), I also discuss change and continuity of the teachers' reported beliefs and practices over time. I compared teachers' beliefs and reported classroom practices at two points in time—before their formal encounter with the WELLS and at the end of my research project. Time factor is illustrated as the pink arrow at the bottom of Figure 3.2. Teachers also provided rationale for why they implemented or did not implement a particular WELLS activity (illustrated as the blue arrow between human capital and decisional capital). Chapter 6 addressed the first research question (i.e., how are early childhood educators' previously reported beliefs about children's literacy learning associated with their first formal encounter with and responses to literacy learning standards), the second research question (i.e., subsequent to early childhood educators' formal introduction to literacy learning standards, to what extent and in what manner are the concepts and priorities reflected in those standards expressed in teachers' reported practices), and the third research question (i.e., how do

early childhood teachers retrospectively describe their experiences of evaluating and implementing a new set of literacy learning standards in their classroom).

Chapter 7 explores program factors that positively and negatively influenced teachers' implementation of the WELLS using the analytic lens of professional capital. Chapter 7 describes program factors' influences on teachers' development of and access to (1) human capital (including literacy beliefs, knowledge about literacy), (2) decisional capital (including decisions on classroom instruction and activities), and (3) social capital (including opportunities to collaborate with others). Program factors as one type of contextual factors are illustrated as the house shape in Figure 3.2. Teachers' professional capital is illustrated as the blue circle with three parts, which represent the three forms of capital. The green box and blue circle are placed inside the house shape represents the influences of program factors on the interactions between teachers' encounter with the WELLS and their professional capital. Note that the size of the house-shape box does not suggest that program factors' influences on teachers' use of the WELLS are larger than other factors. Program factors represent where teaching happens. Chapter 7 responded to the third research question (i.e., how do early childhood teachers retrospectively describe their experiences of evaluating and implementing/not implementing a new set of literacy learning standards in their classroom).

Chapter 4 Analytic Results of the Wisconsin Early Literacy Learning Standards

In order to study teachers' beliefs and actions related to the Wisconsin Early Literacy Learning Standards (WELLS), as well as to introduce the WELLS to four case study participants, it was necessary to understand the framework of the WELLS and purposes of each section. This chapter presents content analysis results of the WELLS. I will describe (1) the framework of the WELLS and (2) the number of standards and indicators described in the WELLS. Findings in this chapter were used to create introductory PowerPoint slides (Appendix F) for case study teachers that I used to formally introduce them to the WELLS.

Framework of the Wisconsin Early Literacy Learning Standards

Wisconsin Early Literacy Learning Standards (WELLS) are comprised of *performance standards, developmental continua, levels of performance, sample behaviors of children,* and *sample strategies for adults.* The WELLS include four *performance standards* that identify general bodies of knowledge and/or skills that children should be able to know or do. Each performance standard includes a *developmental continuum* that outlines several predictable and progressive *levels of performance*. These levels of performance are shown in successive order from early developmental levels to developmental levels that typically achieved by kindergarten or first-grade children. Corresponding to each performance level, the WELLS provides *sample behaviors of children* that demonstrate children's accomplishments in relation to a given performance level. In addition, the WELLS provides *samples strategies for adults* that can be used to assist children in achieving these performance levels. In other words, each performance standard has a specific developmental continuum that identifies progressive performance levels. For each performance level, the WELLS provides

samples to illustrate how adults can help children achieve each performance level and how children may demonstrate their accomplishments. The *sample behaviors of children* and *sample strategies for adults* reflect performance levels on *developmental continua* that are linked with *performance standards*. The framework of the Wisconsin Early Literacy Learning Standards (WELLS) is illustrated in Figure 4.1.

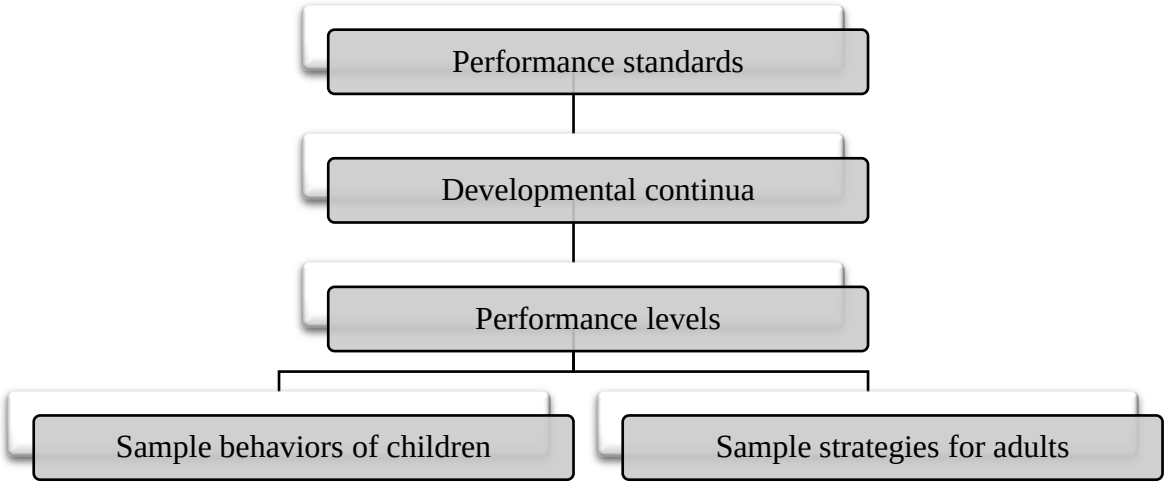

Figure 4.1. Framework of the Wisconsin Early Literacy Learning Standards.

The WELLS includes four performance standards that indicates knowledge and skills that children in Wisconsin are expected to be able to master:

> (1) Develops ability to detect, manipulate, or analyze the auditory parts of spoken language. (2) Understands concept that the alphabet represents the sounds of spoken language and the letters of written language. (3) Shows appreciation of books and understands how print works. (4) Uses writing to represent thoughts or ideas. (Wisconsin Department of Public Instruction, 2011, p. 43)

The Number of Indicators Described in the WELLS

Table 4.1 shows the number of performance levels, sample behaviors of children, and sample strategies for adults described in the WELLS document. For example,

Performance Standard One includes nine performance levels, 28 examples of sample behaviors of children, 34 examples of sample strategies for adults. A total of 71 indicators are included under Performance Standard One. A total of 34 performance levels, 128 examples of children's behaviors and, 145 examples of adult strategies are included across the four performance standards. I included these findings presented in Figure 4.1 on the introductory PPT (Appendix F), which was used to familiarize case study teachers with the organization, purposes, and content of the WELLS.

Table 4.1

The Number of Performance Levels, Sample Behaviors of Children, and Sample Strategies for Adults

Performance standard	Performance levels	Sample behaviors of children	Sample strategies for adults	Total
One	9	28	34	71
Two	9	38	46	93
Three	10	38	41	89
Four	6	24	24	54
Total	34	128	145	307

The purpose of providing the number of performance levels, sample behaviors of children, and sample strategies for adults (shown in the Table 4.1) were (1) to familiarize case study teachers the number of resources available in the WELLS, and (2) to create a common language during the research period. For example, it was easier for teachers to share with me which performance standard and performance level they focused on. Teachers might say that their children's writing ability ranged between Level 2 and Level 5 in relation to the fourth performance standard. Or, their goal was to improve their children's ability of segmenting sounds to Level 6 in the first Performance Standard by the end of this semester. In addition, it was also more convenient for me to document

teachers' implementation of particular performance levels. Instead of writing the entire performance level, I could simply note that this teacher was working on Level 3 in the Performance Standard Two.

Conclusion and Discussion

In short, the results shown above were used to create introductory PowerPoint slides for case study teachers. During the WELLS introductory meeting, I used the introductory slides to help teachers to familiarize with the framework of the WELLS and definitions of terminologies used in the WELLS (e.g., performance standards, developmental continuum). During the introductory meeting, teachers were provided time to read the WELLS document. I showed teachers the pages where the four WELLS performance standards are located and what performance levels represent. We spent time discussing possible ways to incorporate the WELLS in their classrooms and teachers' perceptions about the WELLS including concerns and suggestions related to the use of the WELLS.

The introductory slides served as an essential tool to facilitate this research project. Given that one of the foci of this research project was to understand teachers' literacy beliefs and practices before and after their formal encounter with the WELLS, through providing the introductory slides, case study teachers were able to gain an immediate and general understanding of the WELLS document. Through discussing the introductory slides together, I also ensured that case study teachers had time to understand the goals and the framework of the WELLS. The introductory slides served two purposes: (1) to build a baseline and shared understanding of the WELLS for case study teachers, and (2) to create opportunities for case study teachers to explore connections among their literacy beliefs, literacy practices, and the WELLS. The findings presented in this chapter can

also be used as a resource for teachers who are interested in learning and implementing the WELLS.

Chapter 5 Survey Teachers' Literacy Beliefs and Reported Classroom Practices of the Wisconsin Early Literacy Learning Standards: Patterns Found from the Surveys

Researchers have emphasized the importance of early literacy experiences for children's later reading and academic success (Abbott-Shim, Lambert, & McCarty, 2003; Strickland, & Riley-Ayers, 2006). Given the crucial role of early literacy in children's learning and development, early literacy has become a central focus of educational policy makers. Literacy-related policies, such as Common Core State Standards (Common Core State Standards Initiative, 2010) and each state's early learning standards highlight the required literacy knowledge and skills. These policies indicate new requirements for curriculum planning and bring changes to early literacy practices.

In addition to acknowledging the importance of early literacy, many studies have identified factors that influence the implementation of literacy policies. Many reports have emphasized the important role of early childhood educators in supporting children with learning to read and write (Beijaard, Verloop, & Vermunt, 2000; Lee, & Ginsburg, 2007; Lee, Huang, Law, & Wang, 2013; Sheridan, Edwards, Marvin, & Knoche, 2009). These studies focus on teachers' beliefs about early literacy and literacy-related policies, alongside their integration of the policies into practice. These studies discuss the connections between teachers' beliefs and the implementation of literacy-related policies (Day, Elliot, & Kington, 2005; Lee, Huang, Law, & Wang, 2013; Mather, Bos, & Babur, 2001; Sverdlov, Aram, & Levin, 2014).

In line with studies mentioned above, the current research project recognizes teachers' roles in implementing literacy-related policies to support children's early literacy learning. This chapter explores how teachers' beliefs (a dimension of human

capital) and teaching practices are associated with their encounter with a specific policy document—the Wisconsin Early Literacy Learning Standards (WELLS) (a dimension of decisional capital).

Specifically, this chapter investigates (1) teachers' beliefs about the Wisconsin Early Literacy Learning Standards, (2) teachers' reported instruction related to these standards, and (3) the relationships between teachers' beliefs and reported teaching practices. The goal of this chapter is to help educators understand relationships between teachers' beliefs and reported actions relative to the implementation of the standards.

This chapter consists of six sections. The first section provides a brief overview of the surveys used to collect data including their structures, content, and participants. The second and third sections describe survey findings related to teachers' literacy beliefs based on cumulative frequency analysis and Multidimensional scaling, respectively. In the fourth section, I describe findings related to survey teachers' patterns of reported literacy practices identified through frequency analysis. The fifth section discusses the relationships between survey teachers' stated literacy beliefs and reported practices. Lastly, I summarize and discuss the significance of these findings.

Basturkmen (2012) reported that the majority of studies that have investigated relationships between language teachers' beliefs and practices are case studies, which presents difficulties in generalizing what was learned from cases to the general population. This research project addresses this concern by using the data collected from both surveys and case studies. The results presented in this chapter are mainly from the data collected through the Survey B and the interview data collected from the case studies is used to complement the survey results. Four case study teachers' (Lori, Joyce, Charlie, and Debbie) explanations about their survey responses are used to interpret the survey

findings.

Survey: Structure, Content, and Participants

Survey B was used to investigate teachers' beliefs about the Wisconsin Early Literacy Learning Standards (WELLS), and the frequency with which these standards related activities were reported as being available in classroom. This survey consists of three sections: (1) teachers' school and classroom characteristics, (2) teachers' experiences of using early learning standards, and (3) teachers' beliefs about the WELLS and their current classroom literacy practices. The data collected from the first and second sections were used to understand survey participants' backgrounds including the ages of their students, the types of educational programs they work in, years of teaching experience, and their familiarity with the WELLS.

The third section consists of 26 statements related to literacy learning standards. The participants were asked to indicate how strongly they agreed or disagreed with the 26 statements, and how often they implemented activities related to these statements. About a half of the 26 statements were adopted directly from the WELLS, and other half (12 statements) were adopted from Lim's (2010) study, which explored preschool teachers' beliefs about 62 literacy belief statements. This design allowed me to analyze teachers' literacy beliefs on two dimensions--*beliefs about subject matter* and *beliefs about pedagogy* (Lim, 2010).

All questions in the third section utilized a five-point Likert scale. For questions concerning literacy beliefs, scale "1" indicated that teachers strongly disagreed with the statement, while scale "5" indicated that teachers strongly agreed with the statement. For questions concerning literacy practices, scale "1" indicated that teachers never implemented activities related to the given standard, and scale "5" indicated that teachers

implemented activities related to the given standard on almost a daily basis.

Wisconsin early childhood teachers who worked in early childhood programs and teach children of ages between 2.5 and 5 were invited to complete the Survey B. 38 school districts and 298 childcare centers were contacted and invited. 189 early childhood teachers responded to Survey B. After deleting responses with missing answers and low-effort responses (i.e., responding to all the questions with the same answers), 90 of the responses were considered valid and used for further analyses.

Patterns of Literacy Beliefs: Results of Cumulative Frequency Analysis

While many studies have identified patterns related to teachers' literacy beliefs in general, little attention has been paid to understanding early childhood teachers' beliefs about literacy learning standards. This section presents findings related to teachers' beliefs about the Wisconsin Early Literacy Learning Standards (WELLS) as reported on Survey B.

To discuss teacher's beliefs about the WELLS, the 26 statements were categorized into four literacy areas that reflect the organization of the WELLS. The first area addresses children's ability to detect, manipulate, and analyze the sounds of spoken language. Four survey items (statements) were related to this first area. The second area addresses children's understanding of the relationships among letters, and spoken and written language. Seven survey items were related to this second area. The third area relates to children's ability to handle books and understand how print works. Six survey items were related to this third area. The fourth area relates to children's ability to write. Four survey items were related to this fourth area. In order to explore teachers' views on preparing literacy environments, I added an additional set of statements related to literacy environments. The fifth area includes five items that are not directly related to the

WELLS but are related to teachers' pedagogical beliefs about literacy environments. Table 5.1 presents each survey item and its corresponding area.

Table 5.1

Survey Item and Its Corresponding Area in the WELLS

Literacy Areas	Corresponding Survey Items	Total items
Sound detection and manipulation	3, 4, 5, 6	4
Phonics and word study	7, 8, 9, 10, 17, 18, 26	7
Book handling and concepts of prints	11, 12, 13, 14, 15, 20	6
Writing	1, 2, 16, 19	4
Literacy environments	21, 22, 23, 24, 25	5

As described in the introduction, each survey participate was asked to indicate their agreement level with the 26 statements using a five-point Likert Scale (i.e., strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5). One drawback of using non-standardized/original scores to compare survey teachers' beliefs is that each participant's scale of agreement can be different. Specifically, each participant may treat a particular score as the baseline. For example, some teachers tend to avoid choosing strongly agree or strongly disagree. In addition, a teacher might express her strong agreement toward almost all the statements (i.e., giving scale 5), and rate only one statement Agree (i.e., giving scale 4). While scale 4 usually means teachers hold a positive attitude toward the statement, in this case, when this particular teacher gave a statement scale 4, it actually means that compared to the other statements; she holds a relative negative attitude to this statement. In addition, teachers who have had negative experiences with learning standards may tend to have a negative attitude toward all the statements. Another personal bias is that each person can express their relative level of agreement/disagreement in varying strengths.

To address these personalized scales, I used the within-person Z (WPZ) score to remove personal biases and standardize subject responses. A positive WPZ score indicates the person's relative positive attitude toward a particular statement, compared to the other statements. In contrast, a negative WPZ score indicates the person's relative negative attitude toward a particular statement, compared to the other statements. Moreover, the response scores from each person are standardized. The WPZ scores from all subjects share a common level of agreement/disagreement scale.

The results shown below were analyzed using WPZ. To present teachers' beliefs about the 26 literacy related statements, I show the percentage of survey teachers who indicated a positive attitude toward each statement.

Results: Teachers' Beliefs about Sound Detection and Manipulation

Children's awareness of sounds in oral language is viewed as one of the strongest predictors for literacy learning (Anthony & Francis, 2005). Four survey items (3, 4, 5, and 6) were related to this area (see Table 5.2).

Table 5.2

Teacher's Literacy Beliefs about Sound Detection and Manipulation.

No.	Survey Item	Attitude toward agreement
3	Children should recognize sounds that match and words that begin or end with the same sounds.	63.30%
6	Children should recognize single sounds and combinations of sounds.	55.60%
4	Children should produce rhyming words in writing and speech.	48.90%
5	Children should discriminate separate syllables in spoken words and begin to blend and segment syllables.	41.10%

Despite the importance of phonological awareness indicated by research (Anthony & Francis, 2005; Lundberg, Frost, & Petersen, 1988), the survey showed that only around

50% of the teachers agreed with the four statements related to phonological awareness. One explanation is that these statements are considered advanced skills on the WELLS developmental continuum. Most teachers might not expect their preschool students to achieve these skills until Kindergarten or 1st grade. For example, one of the teachers in the case study sample explained that her responsibility was to provide learning experiences around the standards but it is 4K or higher grade level teachers' responsibility to ensure children meet these standards. Given that most of the survey participants worked with younger group of children (4-year-old or under), it is not surprising that only half of the teachers agreed with the four statements related to phonological awareness for their students. Another possibility is that some teachers might view these phonological awareness skills as outcomes of learning to read, thus, they might not believe that it should be an important focus for their teaching.

Teacher's Literacy Beliefs about Phonics and Word Study

Seven survey items (7, 8, 9, 10, 17, 18, and 26) are related to phonics and word study (see Table 5.3).

These seven items can be further divided into two subcategories. One subcategory reflects beliefs about literacy content (i.e., what to teach), and the other subcategory reflects beliefs about literacy instruction (i.e., how to teach). Questions 7, 8, 9, and 10 belong to the first subcategory and the findings were similar to what were found in the previous section. That is, only about one half or fewer of the teachers expressed agreement with these four statements perhaps because these skills are considered difficult for children aged four and under. This consideration of age appropriateness also explains why about 74 % of the teachers agreed with Question 7, which is a relatively age appropriate expectation in comparison to the other three statements.

Table 5.3

Teacher's Literacy Beliefs about Phonics and Word Study

No.	Survey Item	Attitude toward agreement
7	Children should use a combination of letter sounds, familiar environmental print, and picture cues to recognize a printed word.	74.40%
8	Children should recognize that most speech sounds (both consonants and vowels) are represented by single letter symbols.	54.40%
9	Children should recognize and name all letters of the alphabet (upper and lowercase) in familiar and unfamiliar words.	45.60%
18	Children should learn many words so they can learn to read.	42.20%
26	Teachers need to provide text with consistent spelling patterns (e.g., the fat cat sat on a hat).	34.40%
17	Children need plenty of drill and practice to learn the sounds of letters.	28.90%
10	Children should read familiar decodable and some irregular words in books, signs, and labels.	27.80%

Questions 17, 18, and 26 describe three pedagogical approaches to teach phonics and word study. Fewer than 43% of teachers expressed positive attitudes toward these three statements. Questions 17 and 18 address the need for large amounts of drill on letter and word recognition for children to become successful readers. This result reflects early childhood teachers' widely-accepted emphasis on play-based pedagogy to promote active and exploratory learning (Bertram and Pascal, 2002; Walsh, Sproule, McGuinness, Trew, & Ingram, 2010). Hence, few teachers valued these two statements which advocate learning through repetition and practice.

Question 26 regards teachers' belief in the use of decodable texts. Reading decodable texts has been viewed by some researchers as an effective way for children to practice their knowledge of sound-letter relations in contexts (Chard & Osborn, 1999). Although children's ability to recognize spelling patterns is a focus of phonics and word

recognition, only 34 % teachers agreed that teachers should provide text with consistent spelling patterns. One possible reason is that decoding, letter-sound correspondence, and alphabetic knowledge are all considered advanced skills for four-year-olds and younger, and some teachers might think it is too early to provide books that focus on these skills. In addition, the quality of decodable books varies. This might explain teachers' reluctance to use decodable books. In contrast, other teachers might believe that providing a variety of books including decodable books that connect to students' interests can support students' different developmental needs (Brown, 1999; Edmunds & Bauserman, 2006). This finding reminds us to consider the quality and age appropriateness of learning materials including decodable books when we provide opportunities for children to be familiar with phonics and word patterns.

Teacher's Literacy Beliefs of Book Handling and Concepts of Prints

Six questions (11, 12, 13, 14, 15, and 20) address book handling and concepts of prints (Table 5.4).

In general, over a half of the teachers agreed with these six statements. However, agreement percentages varied from about 54% to 97%. Given that concepts about print is widely accepted as a foundation for emergent literacy (Crain-Thoreson, & Dale, 1992), over half or more of the teachers agreed with all statements related to print awareness and concepts. Fewer teachers also agreed with statements 12, 14, and 15 that emphasized skills-based outcomes such as children should be able to identify author and illustrator of a book, and to differentiate letters, words, and sentences. Overall, the results reveal that survey teachers tended to value meaning-driven/comprehension-oriented instruction (such as children asking questions about book illustrations) over skills-based/ analytic-oriented instruction (such as analyzing characters or events in a story).

Table 5.4

Teacher's Literacy Beliefs about Book Appreciation and Concepts of Prints

No.	Survey Item	Attitude toward agreement
11	Children should look at picture books and ask questions or make comments.	96.70%
13	Children should know how to handle books correctly and show increasing skills in print directionality.	95.60%
20	When reading books to children, teachers should define new words so that children can learn them.	92.20%
12	Children should know that the book has a title, author, and illustrator.	83.30%
15	Children should understand that books have characters, sequence of events, and story plots.	63.30%
14	Children should understand the difference between letters, words, and sentences.	54.40%

Teacher's Literacy Beliefs of Writing

Survey items (1, 2, 16, and 19) were categorized as addressing writing (Table 5.5). In general, fewer than a half of the teachers agreed with these writing related statements. Moreover, less than 10% of the teachers agreed with the Statements 1 and 2.

Table 5.5

Teacher's Literacy Beliefs about Writing

No.	Survey Item	Attitude toward agreement
16	Children should use knowledge of sounds and letters to write some words and phrases (inventive and conventional spelling).	45.60%
19	Children should learn to write with the correct strokes.	45.60%
1	Children should do homework.	10.00%
2	Children should do worksheets.	2.22%

Teachers' lack of agreement related to children completing homework and worksheets is consistent with Lim (2010)'s findings. As discussed earlier, this finding aligns with early childhood teachers' strong support of play-based learning approaches and their disapproval of developmentally inappropriate practices (Bredekamp & Rosegrant, 1992). However, two case study teachers argued that the ways people defined and use homework and worksheets influenced their views on these practices. Lori and Charlie believed that some types of homework such as telling a story or completing a hands-on activity together with parents could support children's literacy learning and enhance school-family relationships. Additionally, Charlie argued that if worksheets connect to children's previous learning and are used to deepen their learning, he would support the use of worksheets.

Regarding Statement 16, about 45% of the teachers agreed that children should be able to produce writing. This finding is higher than expected given that the more advanced skills related to reading were rated as unimportant (e.g., decoding, letter-sound correspondence skills). Furthermore, writing words and phrases was listed as the last stages on the developmental continua of WELLS Performance Standard 4. One possibility that explains why a half of the teachers agreed with this statement is that encouraging children to express their ideas and explore writing is considered developmentally appropriate (Byington & Kim, 2017). Instead of viewing writing as a required outcome, teachers believe that it is appropriate for children to use writing as a communication tool (Neuman, Copple, & Bredekamp, 2004). Another possibility is that teachers believed that it is also age appropriate for children to use invented spelling to write so they agreed with this statement.

About a half of the teachers agreed that children should learn to form letters using

correct strokes (Statement 19). Unlike learning to write Chinese characters, which emphasized the importance of correct writing strokes (Law, Ki, Chung, Ko, & Lam, 1998), when discussing learning to write English characters, more attention has been paid to the order of introducing the letters, the formation of the letters, and the particular program used (such as Handwriting Without Tears, The Ball-and-Stick Method) (Anthony & Francis, 2005). Given that all the four case study teachers from my case study sample were either neutral or disagreed with children writing with correct strokes, it remains unclear how early childhood teachers define correct stroke in writing letters and why they thought it is important.

Teacher's Literacy Beliefs of Literacy Environments

Survey items 21, 22, 23, 24, and 25 were related to classroom literacy environments (see Table 5.6).

Table 5.6

Teachers' Beliefs about Literacy Environment

No.	Survey Item	Attitude toward agreement
22	Teachers should set up a reading area in the classroom.	98.89%
21	Teachers should set up a writing area in the classroom.	95.60%
25	Teachers should provide different types of writing products such as stories, signs, letters, and lists.	86.70%
23	Teachers should frequently change environment prints such as signs/posters in the classroom.	56.70%
24	Teachers should provide children with DVDs, VCDs, or video clips such as educational programs and cartoon.	16.70%

Most teachers (ranging from 57% to 99%) agreed with most of the environment related statements. However, only about 17% of the teachers agreed with providing children with DVDs, VCDs, or video clips (Statement 24). In general, most teachers agreed with the importance of setting up literacy learning areas (e.g., reading and writing) and providing various writing products (Statement 25). However, fewer teachers agreed that they needed to frequently change the environmental print displayed in classrooms (Statement 23) or include multimedia texts, video clips and DVDs, in their instruction (Statement 24).

Almost all the teachers (over 95%) agreed with the importance of setting up reading and writing areas in classrooms (Statements 21 and 22). This result is consistent with teachers' belief about the influential relationship between classroom design and literacy learning that is highlighted in many studies (Morrow, 1990; Morrow & Rand, 1991).

Slightly more teachers believed that teachers should set up a reading area rather than a writing area. Additionally, comparing to teachers' beliefs about classroom environments, fewer teachers (86 %) agreed that teachers should provide opportunities for children to access different types of writing products. In general, teachers' agreement toward writing-related statements (21 and 25) is weaker than agreement with reading-related statement (22). This may be because teachers considered writing to be a more advanced skill than reading and did not expect children to produce writing products other than their names during preschool. For example, although Lori provided writing-related activities such as tracing name cards and writing in shaving cream, she believed that it was more important to provide writing experiences than to expect students to produce writing. Another possibility is that some teachers integrated early writing elements (e.g., drawing, scribbling) into an art center and thus did not set up a separate writing area. For example,

Charlie placed all writing materials in the art learning center.

Statements 23 and 24 were the two statements that fewer teachers agreed with in relation to learning environments. Statement 23 concerns teachers' views about environmental print. Only about half of the teachers believed that it was important to frequently change environmental print. Lori provided a possible explanation. She argued that the frequency of changing environmental print is less important than connecting environmental print to children's interests and curricular themes.

Teachers tended to disagree with Statement 24, which asserted that teacher should provide access to VCDs, DVDs, or video clips. Even though studies have indicated the potential benefits of using technology to support children's development (Van Scoter, Ellis, & Railsback, 2001), this disagreement may reflect teachers' uncertainty about integrating digital media into classrooms and their concerns about decreased active learning opportunities associated with screen time. However, according to the survey, all the case study teachers did not oppose the incorporation of technology into classroom but they emphasized the importance of considering the purpose of using technology. Lori and Joyce both mentioned that their school provided movie time when the weather was too bad for outdoor activities or when children were waiting for parents to take them home. However, Lori explained that since many children have massive exposure to technologies at home, she tried not to provide screen time in class.

In short, this section presents survey teachers' agreement related to 26 WELLS related statements. The 26 statements were categorized into five WELLS related areas: (1) sound detection and manipulation, (2) phonics and word study, (3) book handling and concepts of prints, (4) writing, and (5) literacy environments. In general, survey teachers' most valued area was book handling and concepts of prints, and their least valued area

was writing. When closely examining each statement, the findings reveal that over 90% of the survey teachers agreed with the following five statements:

- 22. Teachers should set up a reading area in the classroom (98.89%).
- 11. Children should look at picture books and ask questions or make comments (96.70%).
- 21. Teachers should set up a writing area in the classroom (95.6%).
- 13. Children should know how to handle books correctly and show increasing skills in print directionality (95.60%).
- 20. When reading books to children, teachers should define new words so that children can learn them (92.20%).

The five statements that the most survey teachers disagreed with are:

- Children should do homework (10%).
- Children should do worksheets (2.22%).
- 24. Teachers should provide children with DVDs, VCDs, or video clips such as educational programs and cartoon (16.70%).
- 10. Children should read familiar decodable and some irregular words in books, signs, and labels (27.8%).
- 17. Children need plenty of drill and practice to learn the sounds of letters (28.9%).

The findings reveal that whether or not a particular statement was considered developmentally appropriate is the main factor explains the patterns found in this section. Knowledge and skills highlighted in the statements that were considered too difficult (or developmentally inappropriate) for preschoolers to achieve were often less valued. For example, only few teachers agreed with the importance of decoding skills, writing skills,

spelling skills, and phonological awareness. In contrast, abilities to handle books and ask questions after reading books were valued by most of the survey teachers. In addition, survey teachers tended to value meaning-driven/comprehension-oriented and play-based/ inquiry-based instructional approaches rather than skills-based/outcomes-oriented or strict/traditional instructional approaches. These findings suggest that the concept of developmentally appropriate practices was a commonly accepted belief by most of the participating early childhood teachers.

Types of Literacy Beliefs: Results of Multidimensional Scaling

Another way to expand our understanding of survey teachers' literacy beliefs is to explore the diversity of the teachers' literacy beliefs. Multidimensional Scaling (MDS) is used to find meaningful underlying dimensions from a large data set through examining similarities among the investigated objects (i.e., the pairwise distance between surveyed subjects).

In this research project, MDS is used to examine similarities among 90 survey teachers' responses to 26 literacy standards related statements and to detect meaningful dimensions to describe the data. Three principal dimensions were identified and used as axes in a coordinate system (S-Stress =.14328; D.A.F. = .94288). The literacy continua (dimensions) that are referenced in this chapter include: (1) creating learning environments vs. outcomes-oriented learning, (2) strict/traditional instructional approaches vs. problem-solving approaches, and (3) skills-based learning content vs. context-oriented learning content. I will later describe how the three continua were identified. In this projected coordinate system based on MDS, each teacher has one coordinate (score) along each of the axes (continua). Each teacher's coordinates represent the strength of his/her belief along the three axes (continua). In other words, the higher a

teacher's score is along a continuum (axis), the more the teacher agrees with this particular literacy belief. For example, Figure 5.1 illustrates three survey teachers' scores along each continuum (axis).

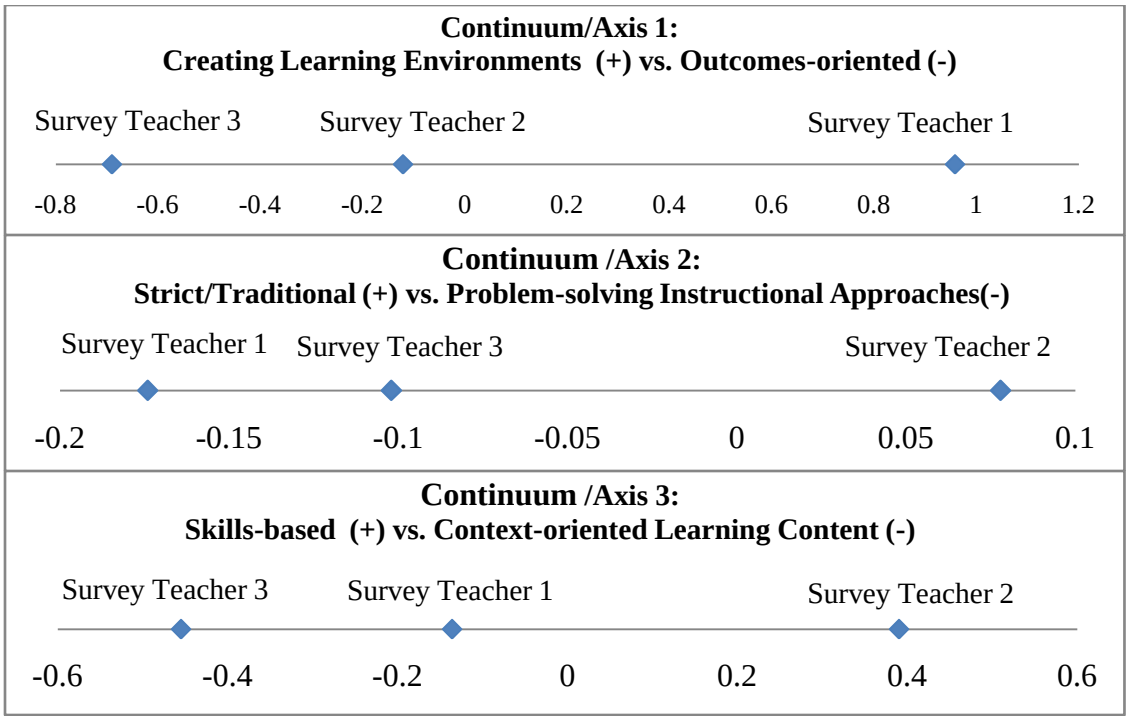

Figure 5.1. Three survey teachers' scores on each of the three literacy continua.

In Continuum 1, Survey Teacher 1 obtained a higher score than the other two teachers which means that she agreed most strongly with statements related to creating learning environments to support children's learning. Following this logic, compared to the other two teachers, Survey Teacher 2 agreed most strongly with statements related to Continua 2 and 3. She believed in the importance of using strict/traditional instructional approaches and skills-based learning content. Figure 5.2 shows all the 90 survey teachers' scores on each continuum.

Each teacher's literacy belief is represented by their inclinations along these three continua. Note that since each teacher has three scores (one on each continuum), instead of using 3-dimensional scatter plot, I used scatter matrices to illustrate all the 90 survey

teachers' scores. In this way, it is easier to locate each teacher's scores on each dimension and identify how the trend along a dimension is related to the trend along another dimension.

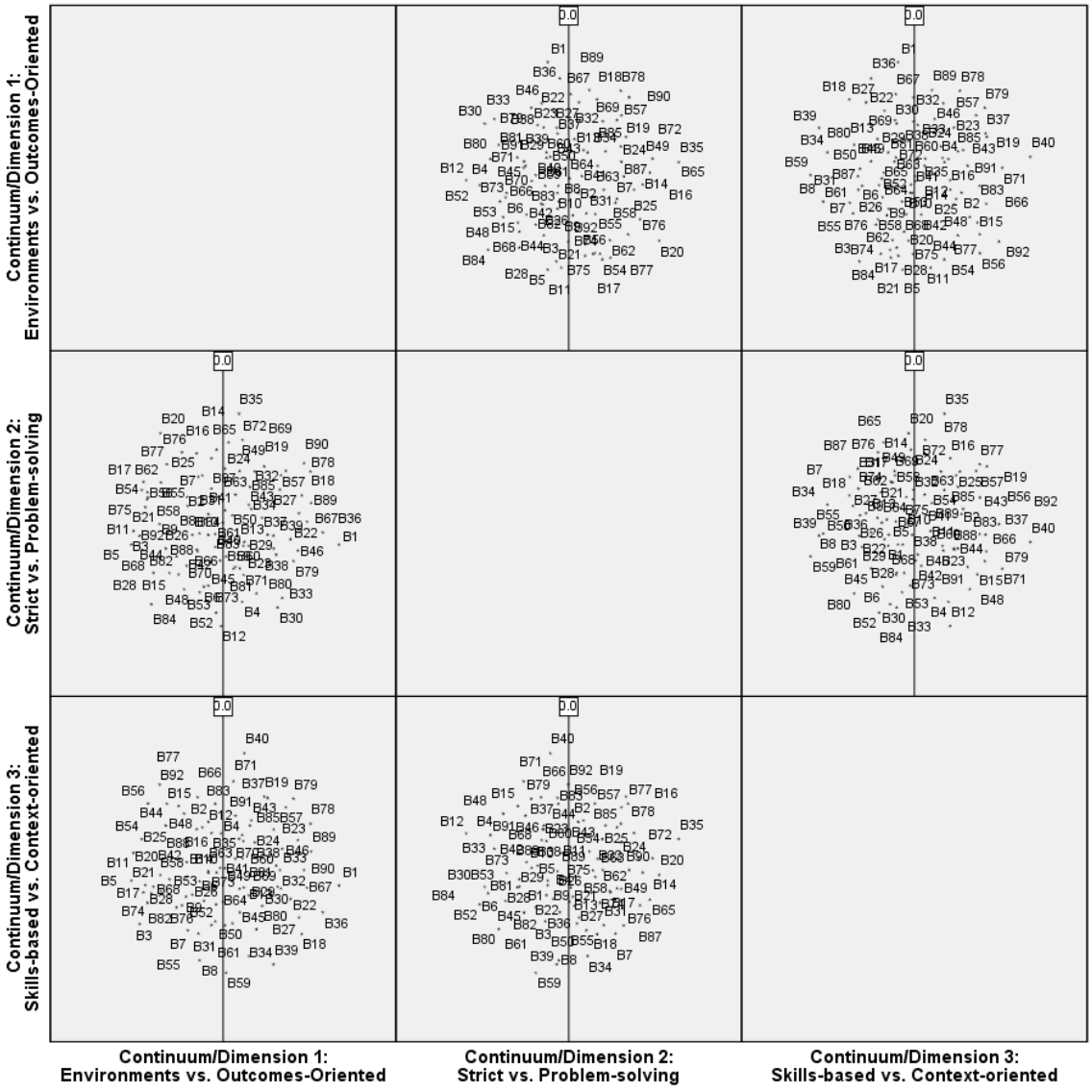

Figure 5.2. 90 survey teachers' scores on the three MDS dimensions.

To better interpret the meanings of the three dimensions (continua), I computed Pearson correlation coefficient between the subjects' scores along each continuum and the scores for each statement. The Pearson correlation coefficients indicate how strongly each statement is correlated with each continuum (dimension). I then name each discuss

Table 5.7

Pearson Correlation Coefficient between Each Continuum and Each Statement

Continuum 1: Creating Learning Environments vs. Outcomes-Oriented Learning	Corr.	Continuum 2: Strict/Traditional Instructional Approaches vs. Problem-solving Instructional Approaches	Corr.	Continuum 3: Skills-based Learning Content vs. Context-oriented Learning Content	Corr.
1_homework	.666	17_drill_and_practice	.641	2_worksheet	.450
22_reading_area	.608	18 _words_to_read	.463	19 _correct_strokes	.418
21_ writing_area	.577	26 _spelling_patterns	.403	4_rhyming	.409
20_define_new_words	.475	9_correct_strokes	.284	3_ begin_end_sounds	.266
23_change_envir_print	.423	21_writing_area	.282	21_writing_area	.239
2_worksheet	.394	7_sound_and_print	.264	5 _syllables	.218
11_read_picture_book	.369	22_reading_area	.260	20_ define_new_words	.201
13_handle_book	.348	24_DVD_video	.104	22_reading_area	.171
25_writing_tools	.277	25_writing_tools	.074	25_writing_tools	.152
24_DVD_video	.273	20define_new_words	.064	17_drill_and_practice	.129
26_spelling_patterns	.188	16_write_words	.047	6_single_com_sound	.128
19_correct_strokes	.173	13_handle_book	.036	24_DVD_video	.090
18_words_to_read	.068	23_change_envir_print	-.032	14_lettr_word_sentnce	.058
12_book_title_author	.022	9_letters	-.108	15_book_charc_seqnce	.008
15_book_charc_seqnce	-.099	10_decode_words	-.127	13_handle_book	-.040
14_lettr_word_sentnce	-.193	2_worksheet	-.149	11_read_picture_book	-.052
7_sound_and_print	-.198	11_read_picture_book	-.178	1_homework	-.104
16_write_words	-.256	12_book_title_author	-.186	7_sound_and_print	-.142
8_speach_sounds	-.259	6_single_com_sound	-.224	18_words_to_read	-.152
4_rhyming	-.341	8_speach_sounds	-.232	12_book_title_author	-.228
10_decode_words	-.364	5_syllables	-.234	8_speach_sounds	-.250
17_drill_and_practice	-.422	1_homework	-.239	23_change_envir_print	-.299
9_letters	-.462	3_begin_end_sounds	-.262	16_write_words	-.354
3_begin_end_sounds	-.482	14_lettr_word_sentnce	-.271	26_spelling_patterns	-.358
5_syllables	-.518	15_book_charc_seqnce	-.397	9_letters	-.377
6_single_com_sound	-.569	4_rhyming	-.433	10_decode_words	-.431

Note. - represents negative correlation

continuum by observing the patterns of the statements with relatively strong correlations to the continuum (dimension). The correlation coefficients are show in Table 5.7. Below I discuss the three identified literacy continua.

Literacy Continuum 1: Creating Learning Environments vs. Outcomes-Oriented Learning

The magnitude of the correlation coefficient between an axis and a statement indicates the strength of the relationship. As shown in Table 5.7, Continuum 1 reveals strong positive correlations with Statements 1, 20, 21, 22, and 23 and strong negative correlations with Statements 3, 5, 6, 9, and 17. After carefully examining the patterns among these statements, I found that the higher score a teacher obtained along the first continuum, the stronger that the teacher valued his/her role in preparing literacy learning environments and creating literacy learning opportunities (e.g., setting up writing and reading areas, changing environmental print, providing homework) and the less they focused on children's learning outcomes. (e.g., children's ability to manipulate sounds, recognize letters). Teachers who have a positive higher score on the first continuum tended to believe in the importance of learning environment preparation and did not expect children to produce or master literacy skills, especially skills related to letter-sound correspondence and phonological awareness. In other words, the first type of literacy perspective highlights the importance of literacy-rich environments, where teachers create environments for children to learn and explore based on children's interests and development without concern for learning outcomes.

Literacy Continuum 2: Strict/Traditional Instructional Approaches vs. Problem-solving Approaches

As shown in Table 5.7, Continuum 2 reveals strong positive correlations with

Statements 17, 18, 26, and strong negative correlations with Statements 4 and 15. After carefully examining patterns among these statements, I found that the higher score the teachers obtained along the second continuum, the stronger the teachers valued strict instructional approaches (e.g., having children do plenty of drill, memorize many words, read text with consistent spelling patterns) and the less they focused on problem-solving approaches (e.g., how to comprehend the books they are reading, how to produce rhyming words in oral and written formats). Teachers who scored high on this dimension tended to believe that children learned the best through repetitive practice and thus required children to complete tasks such as memorizing spelling or words. They focus instruction on basic skills and less on the application of these skills, which was considered as traditional teaching approaches (Boumova, 2008), where teachers adopt teacher-dominated instruction to teach children skills and knowledge in isolation.

Literacy Continuum 3: Skills-based Learning Content vs. Context-oriented Learning Content

As shown in Table 5.7, Continuum 3 reveals strong positive correlations with Statements 2, 4, and 19 and has strong negative correlations with Statement 10. After carefully examining these patterns, I found that the higher score the teachers obtained along the third axis, the stronger they valued skills-based learning (e.g., produce rhyming words, writing letters, and completing worksheets) and the less they focused on meaning-making (e.g., comprehending words in books, signs, and labels). The third dimension addresses the content of literacy teaching, and depicts a continuum between two different types of learning-- skills-based learning vs. context-oriented learning. Teachers who have a higher positive score on the third continuum tended to focus their curriculum on learning literacy skills in isolation and disapprove of the whole language

approach (Fukada, 2018).

In short, MSD was used to explore different literacy beliefs. The three literacy continua (beliefs) were identified--(1) creating learning environments vs. outcomes-oriented learning, (2) strict/traditional instructional approaches vs. problem-solving approaches, and (3) skills-based learning content vs. context-oriented learning content. This finding provides us a lens to discuss teachers' beliefs related to the WELLS. This finding helps to understand what concepts (highlighted in the 26 statements) can be grouped together to capture teachers' beliefs regarding literacy pedagogy (Continuum 1 and Continuum 2) and literacy content knowledge (Continuum 3).

In addition, MDS helps us understand 90 survey teachers' beliefs relative to each of the three continua. This technique can be used to compare teachers' literacy beliefs. For example, Survey Teacher 1 believes in the importance of preparing literacy learning environments more than Survey Teacher 3 (see Figure 5.1). In chapter 6, I presented a portrait of the four case study teachers' beliefs along the three continua and compare their beliefs relative to these three literacy beliefs.

The findings presented in this section complement the results found from the cumulative frequency analysis, which reveal that most teachers subscribed the belief in developmentally appropriate practices. However, MDS findings suggest that a teacher could subscribe more than one type of literacy belief at the same time. For example, in addition to developmentally appropriate practices, teachers hold beliefs regarding literacy content (e.g., outcome-oriented/skills-based or context-oriented) and literacy pedagogy (e.g., strict/traditional or problem-solving).

Implementation of Literacy Learning Standards: Patterns of Classroom Practices

Although it is widely accepted that teachers' beliefs guide and/or precede their actions, it is important to note that interactions between beliefs and teaching practices are dynamic and bidirectional (Breen, Hird, Milton, Oliver, R., & Thwaite, 2001). In addition, teaching experiences influence teachers' beliefs (Borg, 2003).

To better understand interactive relationships between teachers' stated beliefs and reported practices using the Wisconsin Early Literacy Learning Standards (WELLS), this section presents patterns found from the Survey B, with a specific focus on teachers' reported practices of the WELLS. Survey B has 26 WELLS related statements. Participants were asked to indicate the frequency of instruction or activities related to each standard using a five-point Likert scale (Never = 1, Once a month = 2, Once in two weeks = 3, Once a week = 4, Almost every day = 5).

The 26 statements were categorized into five literacy areas based on the structure of the WELLS and one additional area was created to help us understand teachers' classroom practices in terms of literacy environments. The five areas are: (1) sound detection and manipulation, (2) letter and sound correspondence, (3) book appreciation and concepts of prints, (4) writing, and (5) literacy environments. Table 5.8 shows survey teachers' reported practices in the five areas in a percentage frequency distribution.

In Area 1, Sound Detection and Manipulation, over 50 % of the teachers reported that they implemented activities to help children match words with the same beginning or ending sounds and recognize single sounds (e.g., initial consonant in rhyming words) and combinations of sounds (e.g., digraphs, /th/, /ch/, blends, /st/). Similarly, over 50% of the teachers reported that, at least once a week, they implemented activities to help children produce rhyming words, and blend and segment syllables. These results reveal that

Table 5.8

Teachers' Literacy Practices of the Wisconsin Early Literacy Learning Standards

Area	Survey Item	Frequency of Related Instruction or Activities				
		Never	Once a Month	Once in Two Weeks	Once a Week	Almost Everyday
Area 1: Sound detection and manipulation	5_syllables	15.60%	10.00%	22.20%	28.90%	23.30%
	4_rhyming	10.00%	8.90%	18.90%	27.80%	34.40%
	3_begin_end_sounds	7.80%	5.60%	15.60%	14.40%	56.70%
	6_single_com_sound	6.70%	2.20%	13.30%	27.80%	50.00%
Area 2: Phonics and word study	10_decode_words	23.30%	12.20%	14.40%	18.90%	31.10%
	17_drill_and_practice_sound	23.30%	14.40%	12.20%	15.60%	34.40%
	18_words_to_read	15.60%	11.10%	18.90%	17.80%	36.70%
	26_spelling_patterns	14.40%	18.90%	22.20%	31.10%	13.30%
	7_sound_and_print	7.80%	10.00%	5.60%	24.40%	52.20%
	8_speach_sounds	6.70%	10.00%	15.60%	24.40%	43.30%
	9_letters	4.40%	7.80%	13.30%	22.20%	52.20%
Area 3: Book handling and concepts of prints	14_letter_word_sentence	10.00%	6.70%	14.40%	27.80%	41.10%
	15_book_character_sequence	6.70%	12.20%	12.20%	20.00%	48.90%
	11_read_picture_book	0.00%	0.00%	3.30%	2.20%	94.40%
	12_book_title_author	0.00%	4.40%	5.60%	12.20%	77.80%
	13_handle_book	0.00%	0.00%	4.40%	4.40%	91.10%
	20_teacher_define_new_word	0.00%	2.20%	6.70%	11.10%	80.00%

Table 5.8 *(Continued)*

Area	Survey Item	Frequency of Related Instruction or Activities				
		Never	Once a Month	Once in Two Weeks	Once a Week	Almost Everyday
Area 4: Writing	2_worksheet	53.30%	11.10%	12.20%	16.70%	6.70%
	1_homework	50.00%	17.80%	8.90%	14.40%	8.90%
	16_write_words	11.10%	8.90%	15.60%	30.00%	34.40%
	19_correct_strokes	10.00%	8.90%	11.10%	27.80%	42.20%
Area 5: Literacy environments	24_DVD_video	28.90%	36.70%	13.30%	14.40%	6.70%
	23_change_envir_print	8.90%	45.60%	27.80%	5.60%	12.20%
	25_writing_tools	4.40%	12.20%	10.00%	20.00%	53.30%
	21_writing_area	1.10%	0.00%	6.70%	2.20%	90.00%
	22_reading_area	1.10%	0.00%	3.30%	1.10%	94.40%

activities related to phonological awareness are popular in early childhood classrooms.

In Area 2, Letter and Sound Correspondence, over 50% of the teachers report implementing two types of activities almost on a daily basis—(1) decoding words using letter sounds, environmental clues, and pictures; and (2) learning letters of the alphabet. For almost all the statements in Area 2 (except for Statement 26), over half of the teachers reported that they addressed these activities at least once a week. Regarding Statement 26, about 44% of the teachers stated that they provided students with texts that featured consistent spelling patterns at least once a week. This was unexpected since only 34% of the teachers agreed with this practice. One

possibility could be that the use of decodable patterns was part of the mandated curriculum (such as Scholastic Phonics, Lippincott Phonics Easy Readers, Sundance Phonics Readers). It was also surprising to learn that 75% of the teachers reported that they implemented activities to help children learn the letters of the alphabet at least once a week since only about 45% of the teachers agreed with its importance. Overall, activities involving letter-sound correspondence are common in early childhood settings.

In Area 3, Book Appreciation and Concepts of Prints, as predicated for almost all the statements in this area (except Statements 14 and 15), over 90% of the teachers indicated that they implemented activities related to print awareness at least once a week. In addition, over 90% of the teachers reported implementing activities to help children learn how to handle books, ask questions or make comments about books, and understand print directionality on a daily basis. For statements 14 and 15, about 70% of the teachers reported that they performed either activities to support children's learning of book features (e.g., characters and sequence of events) or to improve children's ability to differentiate letters, words, and sentences at least once a week. The reason that fewer teachers implemented activities related to these two statements could be the two statements are more difficult and most of the participants worked with younger group of children (age 4 and under). In short, given that print awareness is perceived to be a foundational and age appropriate for early literacy, it is reported to be the most popular type of activities implemented in early childhood classrooms.

In Area 4, Writing, over 50% of the teachers indicated that they never provided homework or worksheets to their students. This finding aligned with teachers' reports that fewer than 10% of the teachers agreed that doing homework or worksheets was important.

Although teachers' agreement across the two practices was low, 20% of the teachers still reported providing homework or worksheets at least once a week. In addition, at least 65% of the teachers reported that they designed activities for children to practice writing words and phrases, and to learn to write with correct letter formation at least once a week. The frequency of teachers' incorporation of writing related activities in the classroom was higher than expected since less than half of the teachers agreed that writing words was important. Although further investigation is needed to understand what caused this difference between beliefs and practices, a few possible factors that have been identified, including program factors (work environments), a lack of professional training, principal's support, and the grade level of the children (Faour, 2003; Jamalzadeh, & Shahsavar, 2015). For example, Jamalzadeh and Shahsavar (2015) studied 30 teachers who taught English as a Foreign Language in two different departments (adult department and young adult department). The teachers were asked to teach the same syllabus and follow the same teaching methods. Jamalzadeh and Shahsavar (2015) found that teachers' work environments (i.e., which department) influenced how well teachers could complete the assigned tasks. Teachers in the young adult department could more closely follow their teaching plans than those taught in the adult department. This finding reveals that teachers' work environments (program factors) could cause the inconsistency between teachers' beliefs and their teaching practices. Chapter 7 will discuss more about how program factors influence teachers' beliefs and teaching practices.

In Area 5, Literacy Environments, over 90% of the teachers reported that there is always a reading or writing center in their classroom. It might be predicted that nearly 95% of classroom had a reading area since book reading plays an important role in early

childhood education. However, it is somewhat surprising to know that 90% of classroom had a writing area since writing is considered as a more advanced skill. This finding shows that teachers encouraged early writing by creating rich learning environments. The support of learning through environments also explains why over 70% of the teachers provided different types of writing products in the classroom.

Despite the recognition of the importance of learning environments, less than half of the teachers reported that they changed the environmental print about every month. It was also surprising that about 10% of the teachers reported never changing the environmental print in their classrooms. Another surprising finding is that over 28% of the teachers never provide DVDs, VCDs, or video clips in their classroom although there is a general trend to integrate digital literacy in education. Three possible reasons may explain this finding: (1) the survey teachers were relatively conservative regarding their use of digital learning; (2) the survey teachers considered the use of digital learning as developmentally inappropriate; or (3) the survey teachers did not have resources including projectors, TVs, and computers for them to integrate digital literacy in their classrooms. For example, Joyce mentioned that her school has only one TV for 3 classes to share.

In conclusion, this section presented teachers' reported literacy practices in relation to five WELLS related areas. Similar to the findings related to teachers' beliefs, activities related to book handling and concepts of prints were the most common literacy practices and activities related to writing were the least common literacy practices.

The most frequently reported implementing activities are:

- 11. Children should look at picture books and ask questions or make comments.
- 13. Children should know how to handle books correctly and show increasing

skills in print directionality.

- 20. When reading books to children, teachers should define new words so that children can learn them.
- 21. Teachers should set up a writing area in the classroom.
- 22. Teachers should set up a reading area in the classroom.

The least frequently reported implementing activities are:

- Children should do homework.
- Children should do worksheets.
- 10. Children should read familiar decodable and some irregular words in books, signs, and labels.
- 17. Children need plenty of drill and practice to learn the sounds of letters.
- 24. Teachers should provide children with DVDs, VCDs, or video clips such as educational programs and cartoon.

In fact, the findings related to the most and least frequently reported implementing activities aligned with findings related to the most and least valued statements. However, the findings reveal inconsistency between teachers' beliefs and their reported literacy practices for some statements (e.g., activities related to recognizing letters, providing decodable texts, changing environmental prints). Identifying the inconsistency between teachers' beliefs and practices and exploring reasons that explain the inconsistency is important.

It is widely accepted that teachers are the most influential factor in determining how effectively the standards can be used to support children's learning. Teachers use their professional capital including professional knowledge and beliefs to make teaching

decisions. The inconsistency between beliefs and actions often suggests that teachers cannot carry out what they believe to be beneficial for children's learning. Hence, minimizing the inconsistency between teachers' beliefs and practices improves teaching effectiveness and quality. Although factors that caused the inconsistency found in this section remain unclear, researchers have indicated a few factors that possibly explain this difference between beliefs and practices (Faour, 2003; Jamalzadeh, & Shahsavar, 2015). One of them is program factor (e.g., curricular requirements, students' age, workplace environment). In the next section and in Chapter 6, I will discuss possible factors that influence teachers' implementation of the WELLS. In the next section, I use Pearson correlation coefficient to explore relationships between teachers' literacy beliefs and reported practices.

Relationships between Teachers' Literacy Beliefs and Reported Practices

The relationship between teachers' beliefs and their instructional practices is complex. Some studies show consistent relationships between teachers' beliefs and teaching practices (Maloney-Berman, 2004; Shun, 2008), some show otherwise (Basturkmen, Loewen, & Ellis, 2004; Richardson, Anders, Tidwell, & Lloyd, 1991). Scholars have discussed associations between teachers' beliefs and actions in various content areas including science instruction (Cronin-Jones, 1991; Czerniak, & Lumpe, 1996), foreign language learning (Basturkmen, 2012; Borg, 2003; Ng & Farrell, 2003), and technology integration (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012). Most of these studies investigated elementary school teachers' or secondary school teachers' beliefs and actions (e.g., Cronin-Jones, 1991; Ng & Farrell, 2003). Only a limited number of studies focused on literacy learning standards and explored the beliefs

and practices of early childhood teachers.

This section discusses associations between early childhood teachers' agreement level of 26 statements about literacy learning standards, and their frequency of reported implementing activities that are related to these standards. Pearson correlation coefficient was used to show whether and how strongly the 26 pairs were related.

The results show that for almost all of the 26 pairwise correlations between teachers' beliefs and their reported implementation were significantly positive (see Table 5.9). Using the guide that Evans (1996) suggests for describing the strength of correlations, two pairs of correlations show a strong positive correlation ($0.6 < r < 0.8$, highlighted in yellow in Table 5.9); 14 pairs show a moderate positive correlation ($0.4 < r < 0.6$, highlighted in blue in Table 5.9), eight pairs show a weak positive correlation ($0.2 < r < 0.4$, highlighted in green in Table 5.9), and two pairs show very weak and non-significant correlation ($|r| < 0.2$). Positive relationships between teachers' reported beliefs and actions indicate that teachers' beliefs about literacy learning standards are associated with their reported implementation of these standards. Below I describe which pairs of statements belong to strong, moderate, or weak positive correlation groups. I will provide possible explanations for these findings.

The two statements that have the strongest relationships between teachers' beliefs and reported practices are: Statement 17, Children need plenty of drill and practice to learn the sounds of letters; and statement 10, Children should read familiar decodable and some irregular words in books, signs, and labels.

When closely examining teachers' agreement with these two statements on Table 5.3, we learn that most teachers (about 75%) disagreed that children needed plenty of drill to

Table 5.9

Correlation between Teacher's Beliefs and Their Reported Implementation Related to 26 Statements

	Correlations
PAIR_17_Children need plenty of drill and practice to learn the sounds of letters	.671**
PAIR_10_Children should read familiar decodable and some irregular words in books, signs, and labels	.618**
PAIR_24_ Teachers should provide children with DVDs, VCDs, or video clips such as educational programs and cartoon	.597**
PAIR_23_Teachers should frequently change environment prints such as signs/posters in the classroom	.593**
PAIR_18_ Children should learn many words so they can learn to read	.569**
PAIR_15_Children should understand that books have characters, sequence of events, and story plots	.561**
PAIR_3_Children should recognize sounds that match and words that begin or end with the same sounds	.557**
PAIR_8_Children should recognize_most speech sounds (both consonants and vowels)_represented by single letter symbols	.536**
PAIR_5_Children should discriminate separate syllables in spoken words and begin to blend and segment syllables	.523**
PAIR_26_Teachers need to provide text with consistent spelling patterns (e.g., the fat cat sat on a hat)	.506**
PAIR_19_Children should learn to write with the correct strokes	.491**
PAIR_6_Children should recognize single sounds and combinations of sounds.	.478**
PAIR_16_Children should use_sounds and letters to write some words and phrases (inventive and conventional spelling)	.445**
PAIR_2_Children should do worksheets	.439**
PAIR_14_Children should understand the difference between letters, words, and sentences	.433**
PAIR_21_Teachers should set up a writing area in the classroom	.409**
PAIR_25_Teachers should provide different types of writing products such as stories, signs, letters, and lists	.399**
PAIR_9_Children should recognize and name all letters_(upper and lowercase) in familiar and unfamiliar words	.380**
PAIR_12_Children should know that the book has a title, author, and illustrator	.373**
PAIR_1_Children should do homework	.364**
PAIR_7_ Children should use_letter sounds, familiar environmental print, and picture cues to recognize a printed word	.363**
PAIR_20_When reading books to children, teachers should define new words so that children can learn them	.330**
PAIR_4_Children should produce rhyming words in writing and speech	.285**
PAIR_22_Teachers should set up a reading area in the classroom	.279**
PAIR_13_Children should know how to handle books correctly and show increasing skills in print directionality	.160
PAIR_11_Children should look at picture books and ask questions or make comments	-.039

*Note. ** Correlation is significant at the 0.05 level (2-tailed).*

recognize decodable and irregular words. This negative agreement aligns with their reported classroom practices (Table 5.8) as over 65 % of teacher did not report any implementing activities related to these two statements on a daily basis. That is, most teachers disagreed with providing drills and decoding related activities and their reported instruction aligned with their beliefs—they did not include drills and decoding activities in their classrooms.

There are 14 pairs of statements revealed a moderate positive correlation (pairs 2, 3, 5, 6, 8, 14, 15, 16, 18, 19, 21, 23, 24, 26). These findings suggest that most of the time, teachers' beliefs aligned with their implementation. However, there were some circumstances and factors including program factors that prevented teachers from teaching or not teaching particular activities. Hence, the correlation between teachers' beliefs and their reported implementation for these 14 statements showed a moderate positive correlation.

Eight pairs (1, 4, 7, 9, 12, 20, 22, and 25) revealed a weak correlation. These findings suggested that although teachers reported implementing activities related to these statements, their beliefs were not consistent with their implementation. As described below, five possible factors may explain this finding: (1) the timing of the data collected, (2) the age of the children, (3) the diverse interpretation of the issues addressed by the statements, (4) the influences of program requirements, and (5) limitations of Pearson correlation coefficients.

Questions 4, 9, and 12 are relatively advanced skills that are usually expected to be mastered by the end of 4K program or later. Since the survey data was collected during the beginning and middle of the academic year, it is possible that many teachers had not

yet implemented activities to address these standards. It is also possible that since most of the participants worked with younger groups of children, they did not cover activities that addressed these advanced skills.

The pattern found in Statements 1, 7, 25 was that they were valued by most of the survey teachers (e.g., children should recognize words; teachers should provide writing products) or they were disvalued by most of the survey teachers (e.g., children should do homework). However, teachers' frequency of implementing these activities did not reflect the pattern found in their beliefs. For example, 86.7% of the teachers believed that teachers should provide different types of writing products but only 53% of the teachers actually did so daily. This finding suggests that there were factors such as program factors that caused the inconsistency between teachers' beliefs and practices. For example, despite that teachers wanted to provide different types of writing tools, their school might not provide enough funding for them to do so. Chapter 7 will discuss how program factors influenced teaching practices. Or, it could be the other way around. Most of the teachers reported implementing activities related to Statement 20, i.e., teachers should define new words when reading a book. However, even though 92% of the teachers agreed with this statement, their agreement levels varied ranging from 0.11 to 1.71. This finding reflected teachers' diverse interpretation of the issues related to whether they should define new words when reading. Teachers' disparate agreement strengths and their universal implementation frequency (e.g., they defined new words every day) explained the low correlation.

Correlations found between the two pairs of statements (11 and 13) were very weak and insignificant. In their responses to Statement 11 (children should look at picture

books and ask questions or make comments) and Statement 13 (children should know how to handle books correctly and show increasing skills in print directionality), almost of all teachers (about 90%) reported implementing activities related to these statements every day. However, survey results showed that teachers had varying beliefs about these statements. The correlation coefficients for both pair of statements were small. One possible explanation is that providing picture books is generally a mandatory activity. Even though teachers expressed different levels of agreement with picture books related activities, they were required to implement these activities. This finding suggests that program requirements may have possibly influenced teachers' decisions of using the WELLS.

One possible reason that explains the low correlation between teachers' belief and reported practices found for the statement 22 (teachers should set up a reading area in the classroom) is due to the limitation of using Pearson correlation coefficient. The Pearson correlation coefficient measures linear relationships between variations in responses in beliefs and reported implementations. Since most people responded scale 5 in regard to beliefs and implementation (i.e., there was almost no variation), Pearson correlation coefficient cannot measure how changes in survey participants' belief would reflect an emphasis in their implementation. As a result, the correlation between beliefs and implementation is small. Despite the low correlation, the original survey responses suggest that most teachers agreed with the importance of setting up a reading center and most of them reported doing so in their classrooms.

In sum, almost all of the 26 pairwise correlations between teachers' beliefs and their reported implementation were significantly positive. However, the strength of the

correlations of each pair varied. The findings presented in this section helped us gain a better understanding of the consistency and inconsistency between teachers' beliefs and their implementation related to WELLS. For the pairs that showed a low correlation, possible factors that might explain the low correlation were identified including: (1) the timing of the data collected, (2) the age of the children, (3) the diverse interpretation of the issues addressed by the statements, (4) the influences of program requirements, and (5) limitations of Pearson correlation coefficients. These factors help us understand and improve the inconsistency between teachers' beliefs and practices identified in this chapter.

Conclusion and Discussion

Teachers have been identified as one of the key factors that influence the quality of curriculum and the effectiveness of school reform. Given teachers' important role, many researchers have tried to identify factors that influence teaching practices. To respond to this goal, a focus of these studies is to understand relationships between what teachers believe and what they do in classrooms.

The chapter explores this association with an emphasis on Wisconsin early childhood educators' literacy beliefs and their use of the Wisconsin Early Literacy Learning Standards (WELLS) in classrooms. I analyzed 90 Wisconsin early childhood teachers' survey responses using descriptive analysis, Multidimensional scale method, and Pearson correlation. Three types of findings were discussed: (1) the patterns of early childhood educators' literacy beliefs, (2) the patterns of early childhood educators' literacy reported practices, and (3) the relationships between early childhood educators' literacy beliefs and their reported implementation.

This chapter provides numerical information and statistically credible overview of 90 Wisconsin early childhood teachers' reported beliefs and practices regarding the Wisconsin Early Literacy Learning Standards (WELLS). Key findings include: (1) teachers' most valued and most frequently reported implementing literacy area was book handling and concepts of prints; (2) teachers' least valued and least frequently reported implementing literacy area was writing; (3) three MDS dimensions to describe teachers' literacy beliefs; (4) almost all of the 26 pairwise correlations between teachers' beliefs and their reported implementation were significantly positive; and (5) five factors were identified as the explanations for the low correlation found in some pairwise correlations, including (a) the timing of the data collected, (b) the age of the children, (c) the diverse interpretation of the issues addressed by the statements, (d) the influences of program requirements, and (e) limitations of Pearson correlation coefficients. These findings help to understand patterns in early childhood teachers' literacy beliefs and literacy practices in relation to the WELLS. These findings suggest the complexity and the diversity of teachers' literacy beliefs and practices in early childhood programs nowadays. These findings help us rethink and improve literacy teaching. For example, through exploring why teachers thought and implemented the WELLS differently, program leaders can understand how to support teachers' different needs. In addition, by sharing and learning different types of literacy beliefs and practices related to the WELLS, educators can expand their human capital to better support children's literacy learning.

Please note that, in this chapter, I used MDS to explore similarities among the survey teachers’ responses related to literacy beliefs using a three dimensional/continuum system. Each continuum describes an aspect of literacy beliefs. There are two extreme

beliefs along each continuum, e.g., supporting strict/traditional approaches versus supporting problem-solving instructional approaches. The three continua provide a lens to understand and describe teachers' literacy beliefs related to the WELLS. However, the current results only characterize teachers that either strongly approve or strongly disapprove a particular literacy aspect (i.e., Creating learning environments vs. Outcomes-oriented; Strict/traditional vs. Problem-solving instructional approaches; Skills-based vs. Context-oriented learning content). It requires further exploration to describe how teachers' beliefs are differentiated within and across literacy continua utilizing analytic methods such as clustering or factor analysis.

In chapter 6, I will present case study teachers' experiences with implementing the WELLS. I will provide both numerical and descriptive data to discuss the relationships between their beliefs and reported teaching actions. Specifically, I will describe how teachers' experience with the WELLS influenced their reported literacy beliefs and teaching practices. Change and continuity in teachers' beliefs and practices will be discussed.

Chapter 6 Teachers' Essential Role in the Era of Standards-based Education: Case Study Teachers' Literacy Beliefs and Their Reported Implementation of the Wisconsin Early Literacy Learning Standards over Time

With the widespread passage of early learning standards in all the 50 U.S. states (Scott-Little, Kagan & Frelow, 2003a), early childhood teachers now are encouraged or required to implement learning standards in their classrooms. Since most state early learning standards have been developed and adopted only in the past decade (Scott-Little, Kagan & Frelow, 2006; Scott-Little, Lesko, Martella & Milburn, 2007), studying how teachers apply these standards in their classrooms has become an important issue in education research.

Although whether standards-based reform can promote quality education and better academic outcomes (Sandholtz, Ogawa, & Scribner, 2004) is controversial, it is commonly accepted that teachers play an important role in determining the effectiveness of standards-based education (Beijaard, Verloop, & Vermunt, 2000; Lee, & Ginsburg, 2007; Lee, Huang, Law, & Wang, 2013; Sheridan, Edwards, Marvin, & Knoche, 2009). In other words, teachers are the ones who actually implement learning standards in their classrooms and bring the standards to life. Some research has recommended that discussing teachers' beliefs is a powerful way to understand how teachers implement standards (Donnelly & Sadler, 2009; Sloan, 2006).

This chapter recognizes teachers' influential role in deciding how standards are applied in classrooms and argues that teachers' literacy beliefs are connected to their use of the standards. Specifically, this research project explores interactions among case study teachers' beliefs, classroom practices, and their experiences of using a set of standards that was new to them—the Wisconsin Early Literacy Learning Standards

(WELLS). I argue that these interactions are ongoing and vary across teachers. For examples, the WELLS may immediately influence some teachers' beliefs and practices but may not influence other teachers even after significant periods of time. Each teacher uses the WELLS differently because they view literacy differently. In addition, teachers' beliefs and practices may change over time due to the WELLS or other factors. Some teachers' initial literacy beliefs may align closely with the WELLS; others do not. By learning more about the relationships among the WELLS, literacy beliefs, and reported classroom practices, we can gain a better understanding about how teachers implemented the WELLS in their classrooms. In addition, we can understand what factors affect teachers' decision-making process as they implement standards.

Two main goals of this chapter are (1) to describe case study teachers' reported literacy beliefs and practices before and after their formal encounter with the WELLS, and (2) to explore relationships between teachers' literacy beliefs (a dimension of human capital) and their use of the WELLS (a dimension of decisional capital). This chapter presents findings from my case study research and focuses on five domains, including (1) teachers' literacy beliefs at two different time points--before and after their formal encounter with the WELLS, (2) changes in their literacy beliefs over time (3) teachers' reported implementation of WELLS related activities before and after their formal encounter with the WELLS, (4) reported changes in WELLS related activities, and (5) relationships between teachers' literacy beliefs and their use of the WELLS (see Figure 6.1).

This chapter consists of five sections. First, I describe four case study teachers' previous knowledge and experiences of using the WELLS prior to the research. Second, I present findings from the surveys to describe four case study teachers' literacy beliefs and

changes in their beliefs over time. Third, I present case study teachers' survey responses regarding their beliefs and classroom practices. I describe consistency and inconsistency between their reported beliefs and classroom practices related to the WELLS. Fourth, I describe case study teachers' implementation of the WELLS and changes in their reported implementation over time. I discuss how teachers rationalized their reported literacy instructional practices. In other words, I identify factors that influenced teachers' reported literacy practices. Finally, I conclude and discuss the significance of these findings.

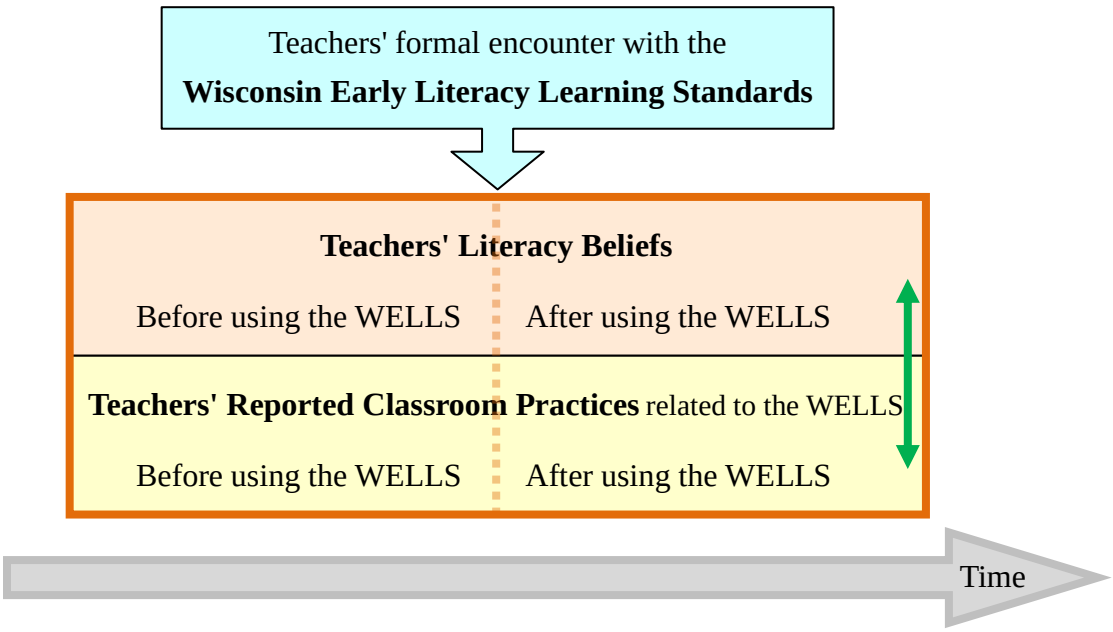

Figure 6.1. Teachers' literacy beliefs and classroom practices before and after their encounter with the WELLS.

Case Study Teachers' Previous Knowledge and Experience of the Wisconsin Early Literacy Learning Standards

To understand how teachers implemented or did not implement the Wisconsin Early Literacy Learning Standards (WELLS), I conducted case study research with four preschool teachers—Lori, Joyce, Charlie, and Debbie.

Lori and Debbie are senior early childhood teachers and have been teaching

preschoolers for more than 15 years. Joyce and Charlie are novice early childhood teachers and have been teaching preschoolers for less than one year. Below I describe the case study teachers' background knowledge and experience with the WELLS prior to the research.

Before formally introducing the WELLS to the case study teachers, I surveyed their knowledge and experiences with the WELLS. Charlie was the only case study teacher who reported not being at all familiar with the WELLS. Although Charlie had served as an elementary school teacher for seven years, he only worked as a preschool teacher for six months when the study began.

The other three teachers, Joyce, Debbie, and Lori reported in the initial survey that they were familiar with the WELLS. When I investigated their responses through interviews, Joyce said that she learned about the WELLS at two seminars four years ago when she was pursuing her associate degree. Even though the WELLS was published 15 years ago, Debbie reported that she had read the WELLS "in the last 20 years" (Debbie, Nov 2015). She was more familiar with the Head Start standards (i.e., Head Start Early Learning Outcomes Framework) since she had taught at Head Start for 28 years. Lori was the only teacher who had the WELLS document available in the office when the research began and whose school explicitly promoted the WELLS. Even so, Lori had not spent much time reading the WELLS.

In addition to their claimed familiarity with the WELLS, the four case study teachers also claimed in the survey that they had experiences using the WELLS in their classrooms. However, when I further investigated their experiences, none of the four teachers could clearly explain when and how they had implemented the WELLS. They responded: "I have minimum experience to [the WELLS]" (Charlie, Nov 2015), or "there

is a book to look at, but I would not use it to plan" (Lori, Nov 2015). None of them were actively and regularly using the WELLS when the research began. Joyce, Debbie, and Charlie reported that their schools were using the Creative Curriculum standards (Dodge, Colker, Heroman, & Bickart, 2002) and Teaching Strategies GOLD assessment (Heroman, 2010), and they did not use the WELLS to guide their curriculum and assessment. Only Lori's school required teachers to use a child reporting form that is based on the WMELS framework (Wisconsin Model of Early Learning Standards; WELLS is part of the WMELS) to document and share children's learning with parents (see Table 6.1).

Table 6.1

Green Oak Childcare Center Child Progress Report Form

Check off the areas of developmental that apply	This photo, work sample and/or anecdote illustrate the following (standards) :
□ Social Emotional Development □ Language and Early Literacy □ Creative Expression/Arts □ Mathematical Thinking □ Scientific Thinking and Exploration □ Physical Development	
Anecdotal Note: Describe what you saw the child do and/or heard the child say.	

Even so, Lori's school did not require teachers to use the WELLS for planning. "It is an offer", Lori explained (Lori, Jan 2016). Hence, Lori only occasionally referenced the WELLS when she discussed her lessons. She said: "Sometimes we look at this (WMELS)…when we want to do activities.... [For example], we are looking at the emotional development [domain], [we are thinking] where (which performance level)

should they (students) be and where (which performance level) can we work on." (Lori, Nov 2015).

Notably, three case study teachers (Joyce, Charlie, and Debbie) described changes in their job responsibilities during the research project, which influenced their work. Joyce was promoted from being an afternoon teacher to a lead teacher in a 4K room. Charlie and Debbie were originally co-lead teachers in the same class. During the second half of the research, Debbie was promoted to be curriculum coordinator. Charlie was assigned a new class and taught alone as the lead teacher (see Table 6.2).

Table 6.2

Comparison of Case Study Teachers' Knowledge and Experience of the WELLS

Teacher name	Knowledge of the WELLS	Experience of using the WELLS	EC Teaching Experiences	Job title
Lori	Yes, has the WELLS book in the office	Occasional use it as an assessment tool	15 years	Lead teacher
Joyce	2 years ago	No	1 year	Afternoon teacher (first half); Lead teacher (second half)
Debbie	20 years ago	No	28 years	Co-lead teacher (first half); Curriculum coordinator (second half)
Charlie	No	No	0.5 year	Co-lead teacher (first half); Lead teacher (second half)

In sum, prior to the research, four case study teachers had limited knowledge and experience with the WELLS. Three of them expect Lori were required to use the Creative Curriculum to plan their lessons. Only Lori's school encouraged teachers to use the WELLS to guide the curriculum. However, Lori almost never referenced the WELLS

when planning. Three of them except Lori experienced a change in their job responsibilities during the research project. Teachers' experience with the WELLS and their program requirements (e.g., mandate curriculum model and job responsibilities) influenced their beliefs about literacy and their use of the WELLS. I will describe these influences in this chapter. In the following sections, I will first describe case study teachers' literacy beliefs and then describe their literacy practices.

Case Study Teachers' Literacy Beliefs

This section describes each teacher's unique beliefs about literacy. There are two goals of this section. First, I argue that teachers' beliefs are different at different points in time. I present teachers' beliefs at the beginning and at the end of the research project. Second, I describe how each teacher's literacy beliefs changed over time.

To explore case study teachers' beliefs over time, two surveys were distributed to case study teachers. Survey A was given at the beginning of the study (in early October) and Survey B (a revision of Survey A) was given at the end of the study (in late March). As described in Chapter 5, teachers were asked to indicate their level of agreement with 26 literacy related statements on a 5-point Likert scale that ranged from strongly disagree to strongly agree. Below I used Multidimensional Scaling and scatter plots to (1) present teachers' literacy beliefs at two different points in time, and to (2) compare teachers' responses across the two surveys and explore how their literacy beliefs changed over time.

I explored case study teachers' literacy beliefs that were (1) not directly related to the WELLS and (2) directly related to the WELLS. MDS analysis discussed teachers' literacy beliefs on three continua that were not directly related to the WELLS. Scatter plot discussed teachers' literacy beliefs about 26 statements related to the WELLS. I used two

different analytical methods (1) to gain a more thorough understanding of teachers' literacy beliefs and, (2) to support my argument that teachers' literacy beliefs changed over time. By exploring literacy beliefs that are both WELLS related and not WELLS related, we can better understand how different aspects of literacy beliefs are associated with teachers' use of the WELLS.

Case Study Teachers' Literacy Beliefs over Time: Multidimensional Scaling

Multidimensional scaling (MDS) was used to support my argument that teachers bring unique literacy beliefs. Multidimensional Scaling (MDS) explored meaningful underlying attributes or dimensions from a large data set through examining similarities among the investigated objects (i.e., the pairwise distance between surveyed subjects).

In Chapter 5, I used Multidimensional scaling (MDS) to examine similarities among 90 Wisconsin early childhood teachers' responses to Survey B and identified three dimensions (continua) that could be used to characterize the teachers' literacy beliefs about the WELLS including: (1) creating learning environments vs. outcomes-oriented learning (as denoted as Dimension/Continuum 1 in Figure 6.2), (2) strict/traditional instructional approaches vs. problem-solving instructional approaches (as denoted as Dimension/Continuum 2 in Figure 6.2), and (3) skills-based learning content vs. context-oriented learning content (as denoted as Dimension/Continuum 3 in Figure 6.2).

These MDS dimensions (continua) were used to understand case study teachers' literacy beliefs and changes of their reported literacy beliefs over time. To obtain case study teachers' scores along the MDS dimensions (continua), I first performed regression by regressing survey teachers' MDS scores on their responses to the survey. Case study teachers' responses to the survey were then substituted into this regression model to form

each case study teacher's MDS scores. In Figure 6.2, a scatter plot matrix shows the case study teachers' scores along the three Multidimensional scaling (MDS) dimensions.

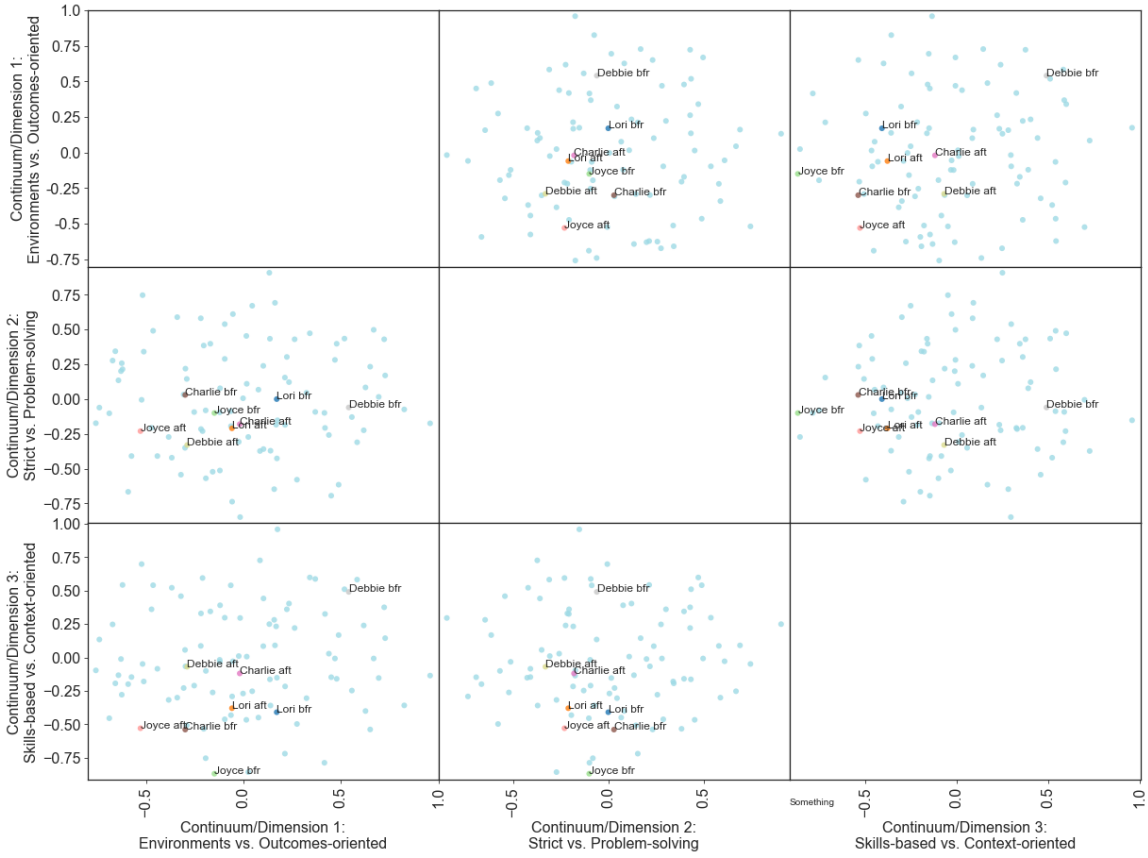

Figure 6.2. Scatter plot matrix of case study teachers' and surveyed teachers' scores along the MDS dimensions.

Each dot represents a case study teacher's scores or a surveyed teacher's scores. The surveyed teachers are illustrated in light-blue dots. The case study teachers are depicted with different colors, corresponding to each teacher's beliefs before and after using WELLS. The dots in each panel indicate that each teacher possessed different views on the three literacy beliefs. For example, when examining the point values along the X axis (Dimension/Continuum 1: creating learning environments vs. outcomes-oriented learning) in the bottom left panel, Debbie (as denoted as Debbie bfr) showed a more supportive

attitude toward creating learning environment approaches than Joyce at the beginning of the research (as denoted as Joyce bfr).

Table 6.3 presents the case study teachers' MDS scores before and after their use of the WELLS over the three dimensions. Case study teachers' scores along each dimension range from -1 to 1. I considered scores larger than 0.6 and scores smaller than -0.6 as strong inclination to support a particular belief, scores from -0.3 to -0.6 or 0.3 to 0.6 as intermediate inclination to support a particular belief, and scores from -0.3 to 0.3 as neutral stance.

Before Lori started using the WELLS, she showed a strong inclination to support context-oriented learning rather than skills-based learning (Dimension/Continuum 3). She did not show a preference between the using strict/traditional teaching approaches and emphasizing problem-solving approaches (Dimension/Continuum 2). Although Lori's score on Continuum 1 did not show a strong preference, her positive score indicated that she tended to support creating learning environments rather than outcomes-oriented learning (Dimension/Continuum 1). After using WELLS, Lori showed less support for creating learning environments for children and providing context-oriented learning. However, her stance shifted slightly toward supporting more problem-solving teaching approaches even though her score was not very strong.

Before her access to the WELLS, Joyce did not show strong support for Dimensions/Continua 1 or 2, but her scores indicated that she tended to support outcomes-oriented learning and problem-solving approaches. Joyce's score on Continuum 3 showed that she had a very strong inclination to support providing context-oriented learning content rather than providing skills-based learning content. After using the

Table 6.3

Case Study Teachers' MDS Scores over the Three MDS Dimensions and Support Inclination

	Dimension/Continuum 1: Creating learning environments vs. Outcomes-oriented learning/Support inclination	Dimension/Continuum 2: Strict/traditional approaches vs. Problem-solving approaches/Support inclination	Dimension/Continuum 3: Skills-based learning content vs. Context-oriented learning content/ Support inclination
Lori before	0.17/Neutral stance	0.00/Neutral stance	-0.41/ Intermediate inclination to support context-oriented learning content
Lori after	-0.06/Neutral stance	-0.21/Neutral stance	-0.38/ Intermediate inclination to support context-oriented learning content
Joyce before	-0.15/Neutral stance	-0.10/Neutral stance	-0.87/Strong inclination to support context-oriented learning content
Joyce after	-0.53/ Intermediate inclination to support outcomes-oriented learning	-0.23/Neutral stance	-0.53/ Intermediate inclination to support context-oriented learning content
Charlie before	-0.30/Neutral stance	0.03/Neutral stance	-0.54/ Intermediate inclination to support context-oriented learning content
Charlie after	-0.02/Neutral stance	-0.18/Neutral stance	-0.12/Neutral stance
Debbie before	0.54/ Intermediate inclination to support Creating learning environments	-0.06/Neutral stance	0.49/ Intermediate inclination to support skills-based learning content
Debbie after	-0.29/Neutral stance	-0.33/ Intermediate inclination to support problem-solving approaches	-0.07/Neutral stance

WELLS, Joyce became a stronger supporter for both outcomes-oriented learning (Dimension/Continuum 1) and problem-solving approaches (Dimension/Continuum 2). Although she still supported providing context-oriented learning content over providing skills-based learning content, the strength of her support decreased.

In Charlie's case, similar to Lori's, he did not show any preference in the second literacy continuum (strict/traditional vs. problem-solving approaches), but he showed intermediate strong support for providing context-oriented learning content. Similar to Joyce, Charlie tended to support creating learning environments for children rather than emphasizing outcomes-oriented learning. After using the WELLS, he became less supportive of creating learning environments for children (Dimension/Continuum 1) and providing context-oriented learning content (Dimension/Continuum 3). Although Charlie still did not show a strong preference on Dimension/Continuum 2, his score indicated that he tended to support problem-solving teaching approaches.

Before formally encountering the WELLS, and compared to other case study teachers, Debbie showed the strongest support for creating learning environments for children and providing skills-based learning content. She did not exhibit a specific preference in regard to Dimension/Continuum 2. It is interesting to know that, after starting to use the WELLS, her support for providing skills-based learning content decreased. She also shifted her inclination for creating learning environments to slightly supporting more outcomes-oriented learning approaches even though her score was not very strong. However, her support for problem-solving approaches increased.

In sum, the findings described above reveal that each teacher's literacy beliefs changed before and after their use of the WELLS. In addition, the pattern and degree of change in each teacher's literacy beliefs were different. While Lori only showed inexplicit

changes in the degree of her support of each of the three literacy beliefs, Joyce, Charlie, and Debbie all showed explicit changes of their beliefs in one or more literacy beliefs. However, it is unclear whether their experience with the WELLS was responsible for these changes. To learn more about teachers' beliefs about the WELLS, I next explored teachers' responses to 26 WELLS related statements.

Case Study Teachers' Literacy Beliefs over Time: Scatter Plot

In addition to MDS analysis, I used scatter plot to describe teachers' literacy beliefs related to 26 statements. Among the 26 statements, 14 statements were directly adapted from the WELLS (statements from 3 to 16) and the other 12 statements were related to the four literacy areas highlighted in the WELLS (including sound detection and manipulation, phonics and word study, book handling and concepts of prints, and writing).

In Figure 6.3, I used scatter plots to depict the case study teachers' scores for his/her beliefs before and after his/her use of the WELLS (Lori in panel a, Joyce in panel b, Charlie in panel c, and Debbie in panel d). In each panel, the x axis represents the WPZ score before the case study teachers learned about the standards, while the y axis denotes their WPZ score after they learned about the standards.

In Figure 6.3, each dot is labeled with the number for the corresponding statement. It is notable that sometimes a single dot represents more than one statement. This is because these statements received the same responses from the teachers. Because of the limited space within the figure, I labeled the dots that represent more than one statement using upper case letters and listed the corresponding in the box at the bottom right of each panel. For example, in panel a, Lori gave statements 7, 8, and 9 the same responses and the dot B was used to denote these three statements.

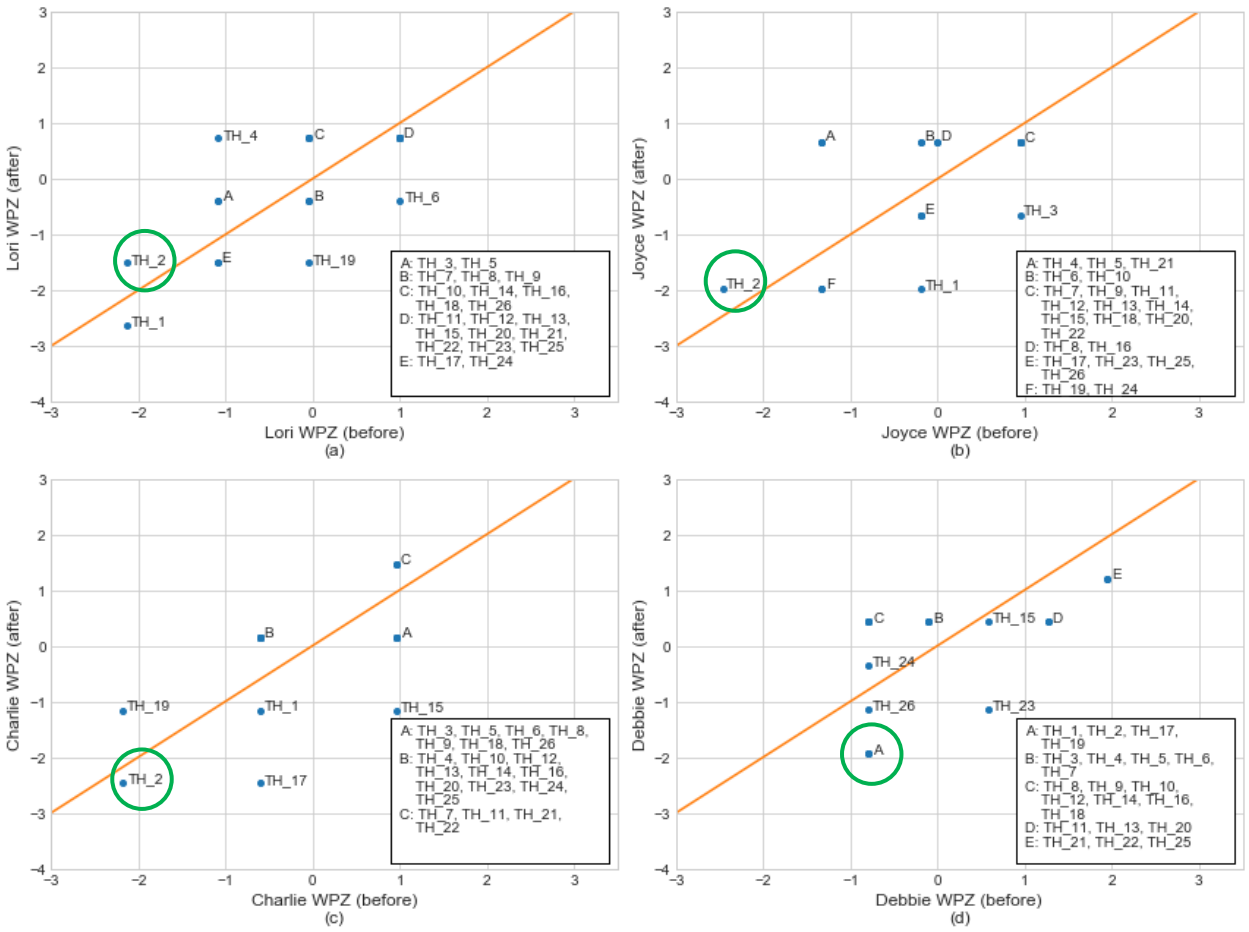

Figure 6.3. Scatter plots of case study teachers' beliefs before (x axis) and after (y axis) their encounter with the WELLS.

When examining the four panels, it is clear that each case study teacher had their unique way of viewing the 26 literacy-related statements. For example, teachers' beliefs relative to Statement 2--children should do worksheets--are different at different points in time. If teachers' responses were the same in both surveys, the dots would fall on the orange line (see the green circle in each panel in Figure 6.3). Although all the four teachers presented negative attitude about using worksheets at the beginning of my research project, Debbie most approved of this idea what Joyce least approved. At the end of the research project, all the four teachers continued to disapprove of the idea of using

worksheets. However, Lori was the person who approved using worksheets the most and Charlie approved the least. This finding supports my prediction that each teacher brought unique literacy beliefs both before and after their formal encounter with the WELLS.

To illustrate how each teacher changed his/her literacy beliefs in different ways, in each panel, an orange line is drawn to indicate each teacher's shift in beliefs. The dots shown to the right of the orange line correspond to statements that show a positive shift in opinion after using the standards. For instance, in panel a, Lori's opinion about statement 4 was -1.08 before her use of the standards and her score shifted to 0.73 after her use of the standards indicating that a positive shift in Lori's attitude about Statement 4. Similarly, dots depicted to the left of the orange lines correspond to statements to which the subjects reveal negative shift in their opinions.

To understand change and continuity in case study teachers' beliefs about the WELLS, I highlight the statements that showed a significant change and almost no change in relation to the pre and post test scores. Graphically, the farther the point is away from the orange line, the stronger the change in teachers' opinion about the statement. I categorized the statements as a strong positive change if the post score has a larger than 1 increase when compared to the pre score, and categorized the statements as a strong negative change if the post score has a larger than 1 decrease when compared to the pre score. If the magnitude of the shift was small, between -0.5 and 0.5, I categorized these statements as almost no changes (see Table 6.4).

According to the grouping, Lori showed a strong positive increase in agreement about the statement 4, while her agreement level with statements 6 and 19 decreased. These findings reveal that Lori became a stronger believer in expecting children to produce rhyming words in writing and speech. Lori became less supportive of the ideas

that children should recognize single sounds and write with the correct strokes.

Table 6.4

Case Study Teachers' Changes in their Beliefs about Survey Statements

	Strong Positive Change of Agreement	Strong Negative Change of Agreement	Almost no change
Lori	4	6, 19	7, 8, 9, 11, 12, 13, 15, 17, 20, 21, 22, 23, 24,25
Joyce	4, 5, 21	1, 3	2, 7, 9, 11, 12, 13, 14, 15, 17, 18, 20, 22, 23, 25, 26
Charlie	19	15, 17	7, 11, 21, 22
Debbie	8, 9, 10, 12, 14, 16, 18	1, 2, 17, 19, 23	15, 24, 26

Note: The 26 statements are: 1. Children should do homework. 2. Children should do worksheets. 3. Children should recognize sounds that match and words that begin or end with the same sounds. 4. Children should produce rhyming words in writing and speech. 5. Children should discriminate separate syllables in spoken words and begin to blend and segment syllables. 6. Children should recognize single sounds and combinations of sounds. 7. Children should use a combination of letter sounds, familiar environmental print, and picture cues to recognize a printed word. 8. Children should recognize that most speech sounds (both consonants and vowels) are represented by single letter symbols. 9. Children should recognize and name all letters of the alphabet (upper and lowercase) in familiar and unfamiliar words. 10. Children should read familiar decodable and some irregular words in books, signs, and labels. 11. Children should look at picture books and ask questions or make comments. 12. Children should know that the book has a title, author, and illustrator. 13. Children should know how to handle books correctly and show increasing skills in print directionality. 14. Children should understand the difference between letters, words, and sentences. 15. Children should understand that books have characters, sequence of events, and story plots. 16. Children should use knowledge of sounds and letters to write some words and phrases (inventive and conventional spelling). 17. Children need plenty of drill and practice to learn the sounds of letters. 18. Children should learn many words so they can learn to read. 19. Children should learn to write with the correct strokes. 20. When reading books to children, teachers should define new words so that children can learn them. 21. Teachers should set up a writing area in the classroom. 22. Teachers should set up a reading area in the classroom. 23. Teachers should frequently change environment prints such as signs/posters in the classroom. 24. Teachers should provide children with DVDs, VCDs, or video clips such as educational programs and cartoon. 25. Teachers should provide different types of writing products such as stories, signs, letters, and lists. 26. Teachers need to provide text with consistent spelling patterns (e.g., the fat cat sat on a hat).

Joyce had increased her agreement with Statements 4, 5, and 21, and decreased her support of Statements 1 and 3. These findings reveal a change in Joyce's attitude toward letter and sound related statements (3, 4, and 5). Joyce became a stronger supporter of the statements that children should produce rhyming words, and blend and segment syllables, which were considered as more advanced skills in the WELLS. But she became less supportive of the idea that children should recognize words that begin or end with the same sounds, which was considered to be a foundational skill in the WELLS. This change might reflect Joyce's job promotion to 4K lead teacher. Since Joyce now worked with children who were older in her new classroom, she may have believed that the advanced skills became more important to this group of children.

Charlie exhibited a strong positive change in his beliefs about Statement 19, and a negative change in his opinions about Statements 15 and 17. The change in Charlie's job responsibilities could explain his increased support of the idea that children should learn to write with the correct strokes, and decreased support of the idea that children should understand that books have characters, sequence of events, and story plots. During the second half of the research project, Charlie was assigned a new class of children with diverse literacy abilities. He changed his goal from promoting book appreciation to supporting children to write their names. Hence, he might worry less about whether or not children needed to learn book features and care more about whether or not children could write their names with the correct strokes.

Debbie showed a strong positive increase in her beliefs about Statements 8, 9, 10, 12, 14, 16, and 18. On the other hand, she showed a strong decrease in her beliefs about Statements 1, 2, 17, 19, and 23. These findings reveal that Debbie became a stronger believer of developmentally appropriate practices so her level of disagreement increased

for practices that were generally considered as developmentally inappropriate including doing homework, doing worksheets, drill and practice, and writing with correct strokes. As her students were older, Debbie was supportive of the idea that the children need to recognize letters, sounds, and letter-sound correspondence.

In sum, similar to the MDS results, these scatter-plot findings support my assumption that teachers not only had their unique literacy beliefs about the WELLS at different points in time, but that their literacy beliefs about the WELLS changed in different ways and for different reasons. In most cases, teachers' changes in their beliefs reflect the change in their job responsibilities (e.g., Joyce and Charlie) and their personal beliefs (e.g., Debbie). Results from the MDS analysis and the scatter plot analysis reveal that case study teachers had unique literacy beliefs and their beliefs changed over time.

Given the interactive relationships between teachers' beliefs and their teaching practices and the goal of this research study is to explore these relationships I present findings describing the relationships.

Relationships between Teachers' Literacy Beliefs and Their Reported Implementation of WELLS Related Practices

This section discusses how teachers' reported literacy beliefs reflected their exposure to and use of the WELLS. I categorized teachers' literacy beliefs into two domains. One is WELLS related literacy beliefs and the other is non-WELLS related literacy beliefs. Teachers described their implementation of the WELLS through surveys and interviews. I used data collected from some classroom observations to contextualize survey and interview data. Observation data also served as memory stimuli to help teachers recall their classroom practices and explain why they made particular teaching decisions.

Below I describe teachers' beliefs in relation to their reported implementation of the

WELLS using the survey data. I then present reported changes in teachers' implementation of the WELLS over time. Finally, I will draw on data from teacher interviews to explore teachers' explanations for their decisions on how to use the WELLS.

WELLS Related Literacy Beliefs and Teachers' Implementation of the WELLS

As mentioned earlier, Surveys A and B included 26 statements that were WELLS related. 14 of them were directly adopted from the WELLS and 12 of them were WELLS related. To help understand relationships between teachers' beliefs and implementation with the focus of the WELLS, I categorized 26 statements into four literacy areas using the WELLS framework (please note that the categorizing strategy used in this chapter was different from the strategy used in Chapter 5 due to different analytical purposes). These areas included: (1) sound detection and manipulation, (2) phonics and word study, (3) book handling and concepts of prints, and (4) writing. The correspondence between WELLS statements and each literacy area is shown in Table 6.5.

Table 6.5

WELLS Literacy Areas and Corresponding Survey Items

Literacy Areas	Corresponding Survey Items
Sound detection and manipulation	3_begin_end_sounds, 4_ rhyming, 5_syllables, 6_single_combination_sound
Phonics and word study	7_sound_and_print, 8_speach_sounds, 9_ recognize letters, 10_decode_words, 17_drill_and_practice, 18_learn words_to_read, 24_DVD_video, 26_spelling_patterns
Book handling and concepts of prints	11_read_picture_book, 12_book_title_author, 13_handle_book, 14_lettr_word_sentnce, 15_book_charc_seqence, 20_define_new_words, 22_reading_area, 23_change_envir_print
Writing	1_homework, 2_worksheet, 16_write_words, 19_correct_strokes, 21_writing_area, 25_writing_tools

To better understand relationships between teachers' literacy beliefs and their implementation of WELLS related activities and instruction, I created Table 6.6 to list teachers' agreement scores and their reported implementation frequency scores on the 26 WELLS related statements in Survey A (at the beginning of the research project) and Survey B (at the end of the research project).

Consistent with the findings discussed in Chapter 5 and the existing research (Day, Elliot, & Kington, 2005; Lee, Huang, Law, & Wang, 2013; Mather, Bos, & Babur, 2001; Sverdlov, Aram, & Levin, 2014), it is not surprising to find that all case study teachers' reported frequency of implementation of the WELLS was based on their level of agreement to the corresponding statements (see Table 6.6). If teachers expressed a high level of agreement with a particular statement, they were more likely to frequently report implementing activities or instruction related to this statement; and vice versa. Lori's case represented this positive correlation between her beliefs and reported implementation. There was only one statement (14) that she identified as a negative belief but had a high reported frequency of implementation at the beginning of the research.

Although in general, Joyce's, Charlie's, and Debbie's beliefs correlated positively with their reported implementation frequency, there were multiple responses that showed negative correlations. For example, prior to her encounter with WELLS, Joyce expressed a low level of agreement with Statements 4, 5, 6, 10, 17, 19, 21, 23, 25, and 26. Nevertheless, she reported implemented these activities at least once a week. I observed similar contradictory relationships following her encounter with WELLS. Despite her low level of agreement with Statements 1, 3, 17, 23, 24, 25, and 26, she implemented these activities at least once every two weeks. In contrast, she expressed a high agreement with Statements 14 and 16 but she only implemented them every week or never. In Table

Table 6.6

Case Study Teachers' Beliefs and Implementation of the WELLS Before and After the Research Project

	Lori TH bfr	Lori IM bfr	Lori TH Aft	Lori IM Aft	Joyce TH bfr	Joyce IM bfr	Joyce TH Aft	Joyce IM Aft	Char TH bfr	Char IM bfr	Char TH Aft	Char IM Aft	Deb TH bfr	Deb IM bfr	Deb TH Aft	Deb IM Aft
3_begin_end_sounds	-1.08	1	-.39	2	.95	n/a	-.66	**5**	.97	4	.15	4	-.11	2	.42	4
4_ rhyming	-1.08	1	.73	5	-1.33	**5**	.66	5	-.60	**4**	.15	4	-.11	2	.42	**1**
5_syllables	-1.08	2	-.39	3	-1.33	**4**	.66	4	.97	4	.15	4	-.11	2	.42	**1**
6_single_combination_sound	1.00	5	-.39	**4**	-.19	**5**	.66	5	.97	4	.15	5	-.11	2	.42	**1**
7_sound_and_print	-.04	2	-.39	**4**	.95	5	.66	5	.97	5	1.46	5	-.11	2	.42	**1**
8_speach_sounds	-.04	2	-.39	**4**	.00	3	.66	5	.97	**1**	.15	3	-.79	2	.42	**1**
9_ recognize letters	-.04	2	-.39	**4**	.95	5	.66	5	.97	4	.15	4	-.79	2	.42	4
10_decode_words	-.04	2	.73	5	-.19	**5**	.66	4	-.60	**4**	.15	4	-.79	1	.42	**1**
17_drill_and_practice	-1.08	2	-1.51	2	-.19	**5**	-.66	**4**	-.60	3	-2.46	**3**	-.79	1	-1.93	1
18_learn words_to_read	-.04	2	.73	5	.95	5	.66	5	.97	5	.15	4	-.79	1	.42	4
24_DVD_video	-1.08	2	-1.51	2	-1.33	3	-1.97	**3**	-.60	1	.15	**2**	-.79	1	-.36	1
26_spelling_patterns	-.04	2	.73	5	-.19	**5**	-.66	**5**	.97	3	.15	4	-.79	1	-1.15	1

Table 6.6 *(Continued)*

	Lori TH bfr	Lori IM bfr	Lori TH Aft	Lori IM Aft	Joyce TH bfr	Joyce IM bfr	Joyce TH Aft	Joyce IM Aft	Char TH bfr	Char IM bfr	Char TH Aft	Char IM Aft	Deb TH bfr	Deb IM bfr	Deb TH Aft	Deb IM Aft
11_read_picture_book	1.00	5	.73	4	.95	5	.66	5	.97	5	1.46	5	1.26	4	.42	4
12_book_title_author	1.00	5	.73	5	.95	5	.66	5	-.60	**5**	.15	5	-.79	2	.42	4
13_handle_book	1.00	5	.73	5	.95	5	.66	5	-.60	**5**	.15	5	1.26	4	.42	5
14_lettr_word_sentnce	-.04	**5**	.73	5	.95	5	.66	**3**	-.60	**5**	.15	4	-.79	2	.42	**1**
15_book_charc_seqence	1.00	5	.73	5	.95	4	.66	4	.97	4	-1.16	**3**	.58	3	.42	4
20_define_new_words	1.00	5	.73	5	.95	5	.66	5	-.60	3	.15	4	1.26	5	.42	5
22_reading_area	1.00	5	.73	5	.95	n/a	.66	5	.97	5	1.46	5	1.95	5	1.21	5
23_change_envir_print	1.00	5	.73	5	-.19	**5**	-.66	**4**	-.60	**5**	.15	4	.58	**2**	-1.15	1
1_homework	-2.13	1	-2.63	1	-.19	n/a	-1.97	**5**	-.60	2	-1.16	1	-.79	1	-1.93	1
2_worksheet	-2.13	1	-1.51	2	-2.46	n/a	-1.97	1	-2.17	1	-2.46	1	-.79	1	-1.93	1
16_write_words	-.04	2	.73	5	.00	4	.66	**1**	-.60	**5**	.15	4	-.79	2	.42	**1**
19_correct_strokes	-.04	2	-1.51	2	-1.33	**4**	-1.97	1	-2.17	**3**	-1.16	**3**	-.79	1	-1.93	1
21_writing_area	1.00	5	.73	5	-1.33	**5**	.66	4	.97	5	1.46	5	1.95	5	1.21	5
25_writing_tools	1.00	4	.73	5	-.19	**5**	-.66	**5**	-.60	**4**	.15	4	1.95	4	1.21	5

6.6, I highlight the implementation scores that indicated contrast relationships in red and bolded font. Table 6.7 presents the total number of statements and the percentage of statements that showed negative relationships between teachers' reported beliefs and implementation frequency (i.e., statements that showed negative correlation/total 26 statements).

Table 6.7 lists the statements that reveal negative relationships between case study teachers' thoughts and implementation frequency. Negative relationship means either that the teacher agreed with a statement but he/she seldom implemented related activities, or, the teacher disagreed with a statement but he/she often implemented related activities. Findings in Table 6.7 reveal that all case study teachers reported positive relationships between their beliefs and practices for at least 60% of the 26 statements. That is, in most cases, when case study teachers showed more positive attitude toward particular WELLS statements, it is more likely that they implemented activities related to these WELLS statements more frequently.

In sum, similar to findings from the survey teachers presented in Chapter 5, findings from the case study teachers also reveal positive relationships between teachers' reported beliefs and literacy practices. However, findings from Table 6.6 suggest that in a few cases, an inconsistency is observable between teachers' reported beliefs and practices. To identify possible factors that explain this inconsistency, it is necessary to examine change and continuity in both teachers' literacy beliefs and practices over time. As the changes in teachers' beliefs have been presented above, below I discuss case study teachers' changes in their literacy practices. I will then discuss how teachers explained these changes and

identify factors that possibly explain the inconsistency between teachers' beliefs and practices.

Table 6.7

Statements That Showed Negative Relationships between Teachers' Reported Beliefs and Implementation Frequency

	Statements_Negative Relationships	Total	Percentage
Lori_before	14_lettr_word_sentnce	1	3.85%
Lori_after	6_single_combination_sound, 7_sound_and_print, 8_speach_sounds, 9_ recognize letters	4	15.38%
Joyce_before	4_ rhyming, 5_syllables, 6_single_combination_sound, 10_decode_words, 17_drill_and_practice, 19_correct_strokes, 21_writing_area, 23_change_envir_print, 25_writing_tools, 26_spelling_patterns	10	38.46%
Joyce_after	1, 3_begin_end_sounds, 14_lettr_word_sentnce, 16_write_words, 17_drill_and_practice, 23_change_envir_print, 24_DVD_video, 25_writing_tools, 26_spelling_patterns	9	34.62%
Charlie_before	4_ rhyming, 8_speach_sounds, 10_decode_words, 12_book_title_author, 13_handle_book, 14_lettr_word_sentnce, 16_write_words, 19_correct_strokes, 23_change_envir_print, 25_writing_tools	10	38.46%
Charlie_after	15_book_charc_seqence, 17_drill_and_practice, 19_correct_strokes, 24_DVD_video	4	15.38%
Debbie_before	23_change_envir_print	1	3.85%
Debbie_after	4_ rhyming, 5_syllables, 6_single_combination_sound, 7_sound_and_print, 8_speach_sounds, 10_decode_words, 14_lettr_word_sentnce, 16_write_words	8	30.77%

Case Study Teachers' Reported Literacy Practices over Time and Factors That Influenced Their Reported Literacy Practices

I used scatter plot to depict case study teachers' scores in relation to their reported implementation of the 26 WELLS related activities in their classes before and after the study (see Figure 6.4). Panels a, b, c, and d respectively show Lori's, Joyce's, Charlie's, and Debbie's scores. In each panel, the x axis represents the score before the case study teachers learned more about the standards, while the y axis denotes their score after they learned more about the WELLS.

In Figure 6.4, each dot is labeled with the number of the corresponding statement. It is notable that sometimes a single dot represents more than one statement. This is because these statements received the same responses from the teachers. Because of the limited space within the figure, I labeled the dots that represent more than one statement by upper case letters and listed the statements belonging to these dots in the box for each panel. For example, in panel a, Lori gave Statements 2 and 3 the same responses and the dot A was used to denote the two statements.

Comparing teachers' responses to Survey A and Survey B helped me understand any changes in teachers' reported implementation of the WELLS over time. I presented these changes to case study teachers during final teacher interview and sought their explanations for the changes.

In each panel, an orange line is drawn to indicate the teacher's shifts in relation to the focus of instruction. The dots shown to the right of the orange line correspond to statements to which the subjects show positive shift in his or her focus after using the standards. For instance, in panel a, Lori's opinion about Statement 5 was 2 before her

introduction to the standards and her score shifted to 3 after her introduction to the standards. Similarly, dots depicted to the left of the orange lines correspond to statements to which reflected a negative shift in the subjects' (teachers') opinion.

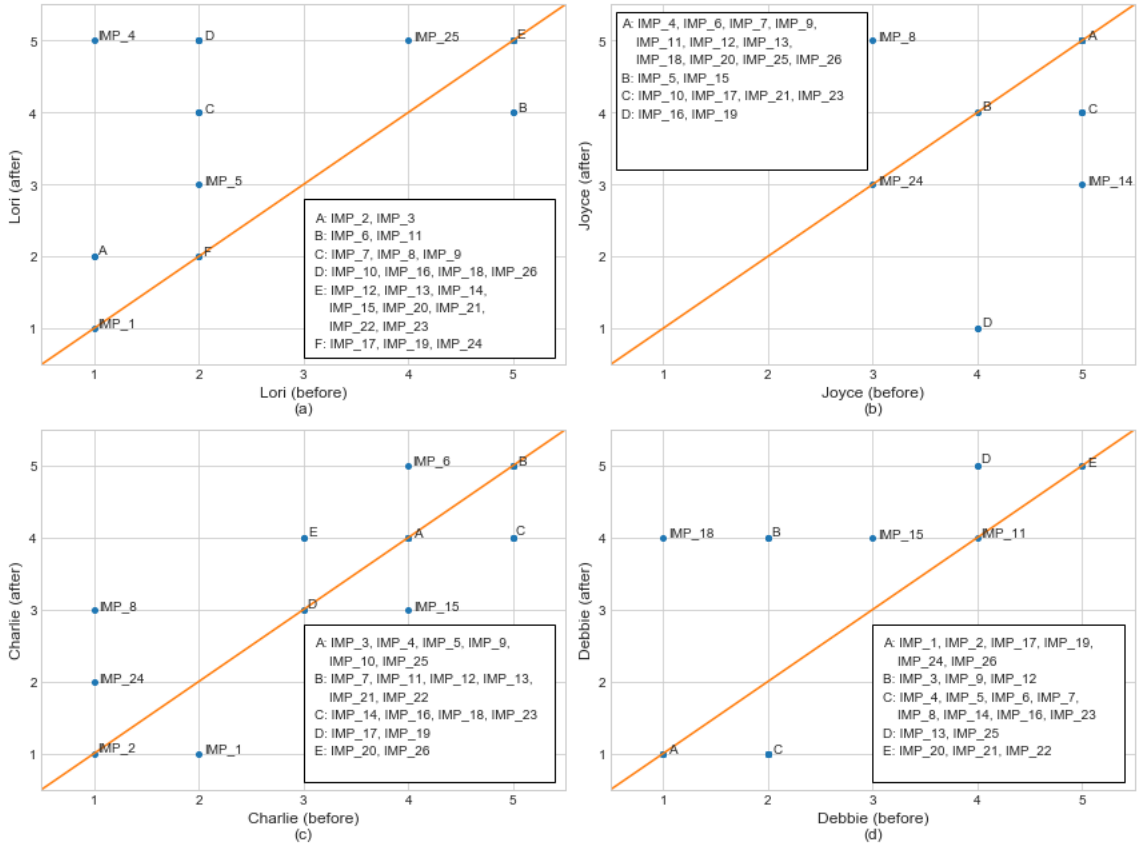

Figure 6.4. Scatter plots of case study teachers' implementation before (x axis) and after (y axis) their encounter with the WELLS.

To understand case study teachers' change and continuity of their implementation of the WELLS, I highlight statements that reveal a significant change, slight change, and no change based on the pre and post tests. Graphically, the further the point is from the orange line, the stronger the change in teachers' opinion about the statement. I categorized the statements into strong positive change if the shift magnitude was equal to or larger than 2, and categorized the statements as strong negative change if the shift

magnitude was equal to or less than -2. If the shift magnitude was small, between -1 and 1, I categorized these statements as slight changes (see Table 6.8).

Table 6.8

Case Study Teachers' Changes in Their Implementation Related to Survey Statements

	Strong increase of implementation frequency	Slight increase of implementation frequency	Slight decrease of implementation frequency	Strong decrease of implementation frequency	No change
Lori	4, 7, 8, 9, 10, 16, 18, 26	2, 3, 5, 25	6, 11	n/a	1, 12, 13, 14, 15, 17, 19, 20, 21, 22, 23, 24
Joyce	8	n/a	10, 17, 21, 23	14, 16, 19	4, 5, 6, 7, 9, 11, 12, 13, 15, 18, 20, 24, 25, 26
Charlie	8	6, 20, 24, 26	1, 14, 15, 16, 18, 23	n/a	2, 3, 4, 5, 7, 9, 10, 11, 12, 13, 17, 19, 21, 22, 25
Debbie	3, 9, 12, 18	13, 15, 25	4, 5, 6, 7, 8, 14, 16, 23	n/a	1, 2, 10, 11, 17, 19, 20, 21, 22, 24, 26

In Lori's curriculum, there were no changes in relation to about a half of the 26 standards related to instruction. A strong increase of her reported implementation frequency was evident in eight statements--4, 7, 8, 9, 10, 16, 18, and 26. Among the four teachers, Lori was the one with the most statements with a strong increase in reported frequency of implementation.

Joyce did not report changes in most of her practices even after she was promoted to 4K lead teacher. A strong increase is evident in Statement 8 and a strong decrease is evident in Statements 14, 16, and 19. Note that since there were missing data in Joyce's

responses to the first survey, I was not able to compare the differences between the first and second survey results for survey items 1, 2, 3, and 22.

As with Lori and Joyce, Charlie and Debbie did not report making changes to most practices. Charlie reported a strong increase in relation to Statement 8. In Debbie's curriculum, a strong increase was reported in relation to Statements 3, 9, 12, and 18.

In sum, the findings reveal that teachers changed their WELLS-related literacy practices over time. To understand why teachers made these changes in their literacy practices, I discussed the findings with case study teachers during interviews. I asked the case study teachers (1) why they did not implement particular activities, (2) why they implemented particular activities more often than others, (3) why in comparison to their first survey responses, did they implement particular activities more often or less often at the end of the research project, and (4) why did they implement a particular activity on a daily basis when they strongly disagreed with its corresponding statement, and vice versa.

Although my intention was to invite teachers to explain as many survey responses as possible regarding how and why they implemented WELLS related activities, the number of questions posed to each case study teacher reflected available time and their chosen literacy topics. Hence, below I present only relationships between teachers' literacy beliefs and reported use of the WELLS that were explicitly explained by the case study teachers. In other words, although there might be other interesting patterns related teachers' classroom practices, I do not report them below.

Non-WELLS Related Literacy Beliefs and Teachers' Reported Implementation of the WELLS

When interviewing teachers about their survey responses regarding their

implementation of the WELLS, it is interesting to know that all case teachers explained their teaching decisions based on rationales that were not WELLS related. They justified their rationale for a particular activity or reported change in practices based on their knowledge of child development, knowledge of children's interests, professional beliefs, teaching experiences, and knowledge of school requirements.

Table 6.8 reveals that all four case study teachers increased their frequency of implementing skills-based learning activities in their classroom including activities focused on rhyming words, writing, and decoding words (e.g., statements 3, 4, 5, 8, 9, 16). Children's age was among the most frequently mentioned factors that case study teachers used to justify their teaching decisions. For example, Lori explained that she started to provide children with markers during the second half of the research project because children were older, saying "I think they are ready to use them"(Lori, Mar 2016). Similarly, teachers also considered age appropriateness when deciding whether or not to implement particular activities. For example, later in the year Lori explained that she now agreed that asking children to sit still and listen was age appropriate.

> In the beginning of the year, this was not our goal because they are still toddlers; we don't just make them sit and listen, but now, as years goes on, it is my goal to help them sit and to focus on what I am talking about, what we are going to do next, or sharing a story, doing a flannel board, or doing a movement. (Lori, Mar 2016)

In addition to children's age, Lori also considered children's interests when making teaching decisions. In fact, during the first interview, Lori emphasized children's interests as the key influence on her design of lessons. Later in the year, she added "[I am] offering more to my kids because they're getting older [and also] because [they are] starting to

being interested in more letters, talking, and reading. And they love being read to" (Lori, Mar 2016).

Teachers' personal beliefs and expectations also influenced how they selected WELLS related activities. Joyce strongly supported creating a writing area because this practice aligned with her chosen teaching goal. She provided writing related activities--such as writing thank you notes, and having children write their names. On several occasions, she negotiated with her coteacher to be able to rearrange the classroom in order to include a writing center.

Similarly, Debbie explained that she disagreed with using worksheets because she believed that children learn best through active participation. Debbie said:

> Worksheet for early childhood kids, I would say [even] kindergarteners, first graders, second graders should not use it either…[Children] do not learn by giving them a piece of paper, and telling them to color apple green or whatever, they learn by having the real objects in their hands, so that's the core of [my beliefs]. (Debbie, Nov 2015)

Teachers' personal teaching and life experiences also influenced their beliefs and practices. Charlie was the only teacher who showed a slightly increased propensity to use technology (Statement 24). When asked about technology, he mentioned that he had used iPads as learning tools with his elementary students and with his daughter, and felt they learned from these experiences. He hence incorporated iPads in his preschool classroom. Similarly, when Lori was asked about worksheets, she referenced her daughter, who was a first grader, and argued that worksheets were for older children and should not be used with young children.

Finally, teachers' understanding about their job responsibilities influenced their literacy practices. In Joyce's case, she was promoted from being an afternoon teacher to being a lead teacher in a 4K room. Working in the 4K room meant that Joyce needed to include more academic skills such as name writing and recognizing rhymes. She said, "to get them in a small group to do something academic is our…goal. [The curriculum for 4K] is different. [Children need to learn] writing names and spelling" (Joyce, Jan 2016). Teachers' job responsibilities influenced the knowledge and skills that were identified as being needed in the curriculum. The influence of program factors on teaching practices is discussed in Chapter 7.

In sum, the findings shown in the scatter plot analysis reveal that case study teachers implemented the WELLS differently and they changed their implementation frequency in relation to WELLS related activities in different ways. When exploring how case study teachers decided how to implement the WELLS, they identified five factors that influenced their teaching decisions, including knowledge of child development, knowledge of children's interests, professional beliefs, teaching experiences, and knowledge of school requirements.

Teachers' Views about the WELLS and Influences on Their Use of the WELLS

Even though case study teachers did not use what they learned from the WELLS to justify their teaching decisions, they identified four ways in which WELLS influenced their teaching. These influences included (1) using the WELLS as a resource for curriculum planning, (2) using the WELLS as a reflective tool for improving teaching, and (3) using the WELLS as a communication tool with parents. They also provided suggestions about how to incorporate the WELLS into their teaching despite its length.

WELLS as a resource for curriculum planning. During the final teacher interview, I asked case study teachers to describe their perceptions about the WELLS. Lori and Joyce viewed the WELLS as a curriculum planning resource which Charlie and Debbie did not. Lori explained that she has been teaching for 15 years and sometimes failed to address all the goals in her curriculum. The WELLS served as a reminder for Lori to examine her literacy practices and then address what was missing. Lori said:

> The standards…give you a nice reminder…[like] I am not thinking about this goal or that goal…In everyday teaching, you sometimes forget…I may [have children] cut[ting] with scissors, zip[ping] up their coat by themselves, it…brought me back to [where] I could work on and…to think of ways I could use as teachable moments. (Lori, Oct 2016)

Lori viewed the WELLS as a source of curriculum ideas. She said: "I'll read the standards and look through the ideas, and say, that is a really cool thing to add to the class. I should do that" (Lori, Mar 2016). Lori appreciated that the WELLS provided literacy teaching ideas. "Reading someone else's ideas and hearing about how to teach something differently is nice and refreshing" (Lori, Mar 2016).

In sum, Lori described the WELLS as a tool for curriculum planning and noted the following advantages of using the WELLS: (1) monitoring what might be missing and should be added, (2) a source of curriculum ideas—to adopt and adapt, (3) a tool to justify teaching decisions and explain why activities are meaningful and appropriate, (4) a tool to understand children's development, (5) a list of learning goals, and (6) a resource to share with parents. Despite Lori's positive attitude toward the WELLS, she rarely selected activities from the WELLS to include in her lessons. Instead, most of her lessons

were planned collaboratively with her co-teachers. This meant that the activity she implemented rarely reflected her chosen WELLS topics.

Joyce described the WELLS as a document that was "very applicable" to planning her curriculum (Joyce, Mar 2016). Joyce closely followed the activities suggested in the WELLS. She chose the literacy standards that aligned with her interests (e.g., Performance Standard 2--book appreciation) and often adopted activities to her curriculum with minimal or no changes (e.g., doing puppet show, reading children's favorite books, making children's own books). She used the WELLS as a checklist of what children should learn and what she should teach. She sometimes commented "I covered this," or "I got this one done" when we read the WELLS together. Unlike Lori, Joyce tried explicitly to implement WELLS activities in her curriculum. She often negotiated with her co-teacher to ensure that she had time to do the activities that she selected from the WELLS.

In contrast, Charlie and Debbie rarely selected activities from the WELLS during the second half of the study. Since their school adopted the Creative Curriculum as their curriculum guidelines, they viewed the WELLS as a resource to help to understand the goals and expectations of early childhood education but not as a tool for curriculum planning. Debbie strongly believed that the WELLS should not be used for curriculum planning but was useful "when we are in a mixed group from different centers and programs; [The WELLS] brings…us a common language to use" (Debbie, Nov 2015).

Although Charlie did not adopt activities from the WELLS, he valued the developmental continuum provided in the WELLS. He explained:

One thing I liked about WELLS is that it has the whole spectrum from very little all

> the way to before you send them (students) to kindergarten.…We [have] the Creative Curriculum [but] it is a little more specific to age. Since I teach the higher kids, I only had the higher end stuffs (knowledge) and it was kind of nice to see the whole spectrum. (Charlie, Mar 2016)

WELLS as a reflective tool for improving teaching. When Lori reviewed her 6-months experience of using the WELLS, she found that she spent more time reflecting on the rationales behind her teaching decisions. Reading the WELLS created opportunities to rethink the connections she made between standards and her existing literacy practices and the impetus to adjust her literacy practices accordingly. For example, Lori intentionally and progressively increased the difficulty of learning activities related to writing. She stated: "[Using the WELLS] really made you think about why I do what I do….I was progressively making things a little harder for them (children)….Now I was more aware…when I read the WELLS book" (Lori, Mar 2016).

Similarly, when teachers were asked about their level of agreement with particular WELLS related statements, teachers reported that the experience of participating in this research invited them to think deeper about their literacy practices. Although they were not always able to justify their survey responses, they were provided with time and space to explore their rationales. For example, Joyce explained her "neutral" stance toward multiple statements on Survey A because she had not thought about these questions before or she was unfamiliar with the topics. For example, she wondered whether using standards would restrict teacher autonomy. When I asked why Joyce responded neutrally to the statement—"materials for teachers' read aloud should only use high-frequency words"--she said, "I do not know the answer, I really do not". But when discussing her

responses, she said, "now looking at [this statement], I may [have answered it] incorrectly.… I guess I was a little confused" (Joyce, Nov 2015). After the discussion, Joyce changed her response from neutral to disagree. Joyce's change in her level of confidence and familiarity with literacy related knowledge was also evident in her second set of survey responses. She seldom chose neutral. Instead, she confidently expressed her agreement and disagreement with the survey statements. Another example occurred when case study teachers reviewed the concepts of syntax and semantic with me. When they were asked about their agreement with the statement— "when learning to read, learning to use context clues (syntax and semantics) is more important than learning to use grapho-phonic cues (letters and sounds)," it took time for Lori and Joyce to understand the definitions of these terms. We brainstormed examples to explain the two terms.

WELLS as a communication tool for parents. Charlie, Joyce, and Lori all argued that it is important to share the WELLS with parents so parents can know what their children are learning at school. Lori said: "as a parent, I would like to get one (a WELLS document)…to know what my child is working towards" (Lori Intro to the WELLS, Nov 2015). Lori added: "It is nice to put [WELLS learning goals] in the [parent] newsletter… so parents get the idea that we're still learning. It's not just you come in, you play, and have a good time" (Lori, Nov 2015).

However, Lori and Charlie both acknowledged that the current WELLS document was not parent friendly. They worried that WELLS document is too lengthy and that busy parents might not have time to read through the whole document. In addition, given that parents of Lori's and Charlie's students were from diverse linguistic and educational backgrounds, they thought parents might be confused by some of the terminology such as

"fine-motor skills." Lori said: "some of the language [in the WELLS]…is a little hard…for parents [who are]…not a very good reader, [or] English is their second language.… I think…they would be confused" (Lori, Nov 2015). Charlie agreed, "If you're a parent…[who] doesn't…have a lot of background in education or a lot of high-level education, it might be a little difficult the way they (the WELLS) word things" (Charlie, Mar 2016).

WELLS is well organized but lengthy. All four case study teachers believed that the WELLS document was well-organized. Lori noted that she could easily locate needed information. Lori, Joyce, and Charlie agreed that the sections on Sample Behaviors of Children, and Sample Strategies for Adults were clear. They maintained that the examples helped them better understand the performance standards. Lori stated, [WELLS] is [well] written…and I like the sample behaviors [section]. It is totally clear. You may understand [the performance standards] better if you read the sample behaviors…The strategies were nice too" (Lori, Oct 2015). Joyce made a similar comment, "[Having examples] was very helpful because a lot of times, what you might think what [the performance standard] is and what it actually looks like might be different" (Joyce, Nov 2015).

However, the length of the WMWLS document affected how teachers used the WELLS. Lori's and Joyce's biggest concern was the length of the WELLS document. In fact, the literacy domain alone extends over 20 pages, and the entire WMELS document (WELLS is part of the WMELS) is over 130 pages. "It's just overwhelming," Lori said (Lori, Mar 2016). Managing this lengthy document appeared to be a challenge for new WELLS users. Lori suggested two possibilities. First, Lori recommended dividing the document into sections and focusing on a few objectives at a time. For example, teachers

might focus on one domain such as literacy or science to observe and evaluate her students' learning and developmental levels. Lori said: "It's easier…when I have a goal…[like] I haven't done a lot of science or math in the room..You can just slip through the math or science [domain] and get ideas" (Lori, Mar 2016).

Second, Lori suggested that teachers continue to implement their existing curriculum but "always…refer back to [the WELLS], and plan with a purpose using the standards" (Lori, Mar 2016). Connecting the standards with the current practices and then blending standards into routines was believed to be a manageable strategy for dealing with the WELLS.

In sum, as I tried to understand why teachers changed their literacy practices after their encounter with the WELLS, I learned that teachers often referenced their non-WELLS related beliefs to rationale their teaching decisions. These non-WELLS related beliefs include: knowledge of child development, knowledge of literacy, knowledge of children's interests, personal beliefs, personal teaching experiences, and knowledge of school requirements. However, teachers expressed that their experience with the WELLS did affect their teaching practices in at least three aspects: (1) WELLS as a resource for curriculum planning (2) WELLS as a reflective tool for improving teaching, (3) WELLS as a communication tool for parents. Even though case study teachers in general believed that the WELLS document was beneficial to their teaching, they also expressed some concerns including the WELLS is lengthy. In addition, the findings also reveal that the participation of this research project created a space for teachers to reflect on their teaching practices.

Conclusion and Discussion

It is widely accepted that teachers are key to the effectiveness of learning standards. Although the connections between teachers' beliefs and teaching actions have been established in the existing research (Day, Elliot, & Kington, 2005; Lee, Huang, Law, & Wang, 2013; Mather, Bos, & Babur, 2001; Sverdlov, Aram, & Levin, 2014), it remains unclear as to how teachers' beliefs influence their use of the WELLS. This research project recognizes teachers' beliefs and experiences as essential considerations in relation to standards-based initiatives. Specifically, I argue that the main reason that we need to pay attention to teachers is because each teacher brings unique views about literacy and hence will implement the WELLS differently. The main purposes of this chapter were (1) to describe case study teachers' literacy beliefs and practices, and (2) to discuss the relationships between case study teachers' beliefs and their use of the WELLS.

By examining survey and case study data, I find that both at the beginning and at the end of the project, case study teachers held different views about the WELLS and used the WELLS in different ways. Moreover, to some degree each teacher changed his/her literacy beliefs. However, it was unclear whether or not these changes were caused by exposure to the WELLS. Through interviews, case study teachers indicated that their beliefs informed their teaching decisions. Results indicated that teachers' use of the WELLS was connected to both WELLS related and non-WELLS related literacy beliefs. Teachers often relied on their professional knowledge including their educational beliefs and knowledge about children to justify their teaching decisions related to the WELLS. This finding suggests that teachers view professional beliefs as the core of planning instruction. It may also suggest that it may take time for teachers to internalize the concepts and knowledge highlighted in the WELLS. In other words, following their

formal encounter with the WELLS, teachers continuously reflected on how well the WELLS aligned with their beliefs, and which WELLS goals and activities might be implemented to support their students' needs. These conditions affected how they implemented the WELLS in their classroom. These findings highlight the importance of teachers' human capital including professional knowledge, beliefs, and skills that teachers possess. That is, teachers did not follow and adopt everything recommended in the WELLS. Instead, they drew on their human capital to decide how to implement the WELLS in ways that were meaningful to their students.

In addition, teachers drew on both WELLS related and non-WELLS related literacy beliefs to justify their teaching decisions. This reveals the importance of considering teachers' literacy beliefs to understand how their beliefs inform their teaching. Given that each teacher brings a unique human capital, differing assemblage aspects of literacy reveal complex relationships between teachers' beliefs and their instruction.

Survey results supported my prediction that teachers' beliefs positively correlated with their implementation of the WELLS. However, there were some cases when teachers expressed low agreement with particular WELLS related statements while reporting that they frequently implemented activities related to these statements. This finding indicates that although teachers' personal beliefs are related to their use of the WELLS, there were other factors such as program requirements that also influenced teachers' implementation of the WELLS. For example, Charlie and Debbie seldom addressed WELLS activities in their lessons because their school adopted the Creative Curriculum. In Chapter 7, I will discuss program factors positive and negative influences on teachers' use of the WELLS.

Chapter 7 Implementing Literacy Learning Standards in Diverse Early Childhood Programs: Program Factors' Influences on Teachers' Development of Professional Capital

In Chapters 5 and 6, I presented patterns related to early childhood teachers' beliefs on the WELLS and their diverse ways of implementing the WELLS. I discussed the relationships between teachers' beliefs and their reported use of the WELLS. Chapters 5 and 6 showed that teachers had unique beliefs about literacy and used their professional judgments to decide how to implement the WELLS to support students' literacy learning. As I explored teachers' views and reported implementation of the WELLS, one particular theme emerged from the data which I call *program factors*. Program factors affected both teachers' beliefs and their use of the WELLS. While this research project honors the role of teachers in deciding how to use the WELLS, program policies and requirements appear to affect teachers' teaching. As Hargreaves and Fullan (2012) remind us that quality teaching is not just the responsibility of individual teachers. Program environment, where teaching happens, also profoundly influences how teachers teach. Program environment supports or limits teachers' capacity of investing in their professional capital and becoming professional teachers. This chapter explores how program factors influence four case study teachers' implementation of the WELLS.

Early childhood education programs vary drastically (Snow, 2012; Barnett and et al., 2017). Given that kindergarten and below are not part of compulsory education in most states, early childhood programs (serving children ages 5 and under) do not have comprehensive and strict regulations for the program structures including the length of the school day, teacher credentialing, curricular requirements, and student-teacher ratios. Although some scholars have pointed out the complexity of early childhood programs

and reminded us that teachers' application of learning standards could be influenced by teachers' program features (Goldstein, 2007; Snow, 2012), they did not provide detailed information about how program factors relate to teachers' implementation of learning standards.

This chapter fills this gap by discussing how program factors affected four case study teachers' implementation of the Wisconsin Early Literacy Learning Standards (WELLS). Program factors in this research project refer to the structures, requirements, or policies existing within early childhood centers that staff must follow. I highlight six categories of program factors showed explicit influences on at least one case study teacher's use of the WELLS. These six categories of program policies include daily schedules, numbers of teachers per classroom, staff meetings, field trips, program environments and funding, and professional development.

The concept of professional capital (Hargreaves & Fullan, 2012) serves as a lens to explore how the six categories of program factors influenced teachers' use of the WELLS. Hargreaves and Fullan (2012) argue that professional and effective teaching is the product of teachers' use and development of three forms of capital----human capital, decisional capital, and social capital. This chapter utilized professional capital to explore program factors' influences on teachers' use of the WELLS. Specifically, I explore how program factors influence case study teachers' access and accumulation of the three forms of professional capital when deciding how to use the WELLS. Specifically, this chapter explores positive and negative influences that program factors have on teachers' implementation of the WELLS.

This chapter consists of four sections. First, I revisit professional capital (Hargreaves & Fullan, 2012), which entails three forms of capital (human, social, decisional capital)

and explain how professional capital can be used as a lens to analyze how program factors influence teachers' use of the WELLS. Second, to gain a better understanding of the case study teachers' program features, I introduce each case study teacher, their teaching backgrounds, and their school and classroom characteristics. Third, I present examples from case study teachers' classrooms to describe how program factors appeared to affect their implementation of the WELLS. I will present six categories of program factors and their positive and negative influence by using professional capital as an analytic framework. I conclude this chapter by summarizing the findings and providing suggestions for early childhood stakeholders.

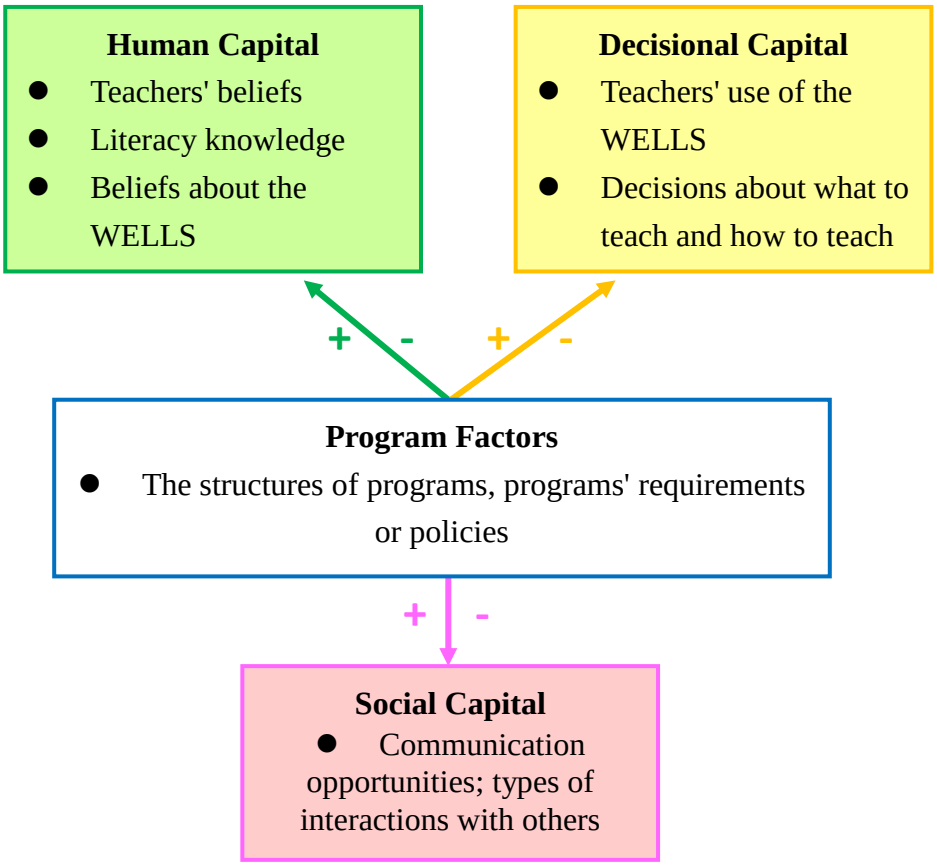

Figure 7.1. Program factors and human, decisional, and social capital.

Professional Capital

I use the concept of Professional Capital (Hargreaves & Fullan, 2012) to explore how program factors influenced teachers' adoption and implementation of the Wisconsin Early Literacy Learning Standards (WELLS). According to Hargreaves and Fullan (2012), professional capital promotes high-quality teachers and teaching. It highlights the importance of three forms of capital that accompany becoming a professional teacher—human capital, social capital, and decisional capital. Quality and effective teaching rely on individual teacher's continuous investment in developing their professional capital. Hargreaves and Fullan (2012) believe that the best way to improve professional capital is through collaboration with colleagues within supportive workplace climates. Hargreaves and Fullan (2012) argue that workplace environment has profound influences on teaching. For example, teachers' instructional decisions are affected by whether or not programs provide enough resources for teachers, create opportunities for teachers to receive feedback from colleagues, and allow and trust teachers to make instructional decisions. This chapter explores how early childhood program environment influences case study teachers' implementation of the WELLS. I specifically focus on factors relative to program policies and requirements that support or limit teachers' implementation of the WELLS.

Professional capital is used to examine program factors' influences. That is, I explore how program factors influence case study teachers' access and accumulation of the three forms of capital when they make their professional decisions about how to use the WELLS. Before presenting program factors' influences on teachers' use of the WELLS, below I first revisit definitions of the three forms of capital.

Three Forms of Capital

H*uman capital* concerns the knowledge and skills that teachers possess. Human capital includes knowledge related to teaching and how students learn, as well as knowledge of subjects, students, and their families. Human capital is also about teachers' commitment and passion to continuously improving themselves to better support students' learning and needs.

S*ocial capital* refers to "how the quantity and quality of interactions and social relationships among people affects their access to knowledge and information" (Hargreaves & Fullan, 2012, p. 90) and references the importance of collaboration and building networks among teachers and administrators. In other words, through interacting and working with others, teachers are able to gain new knowledge and skills to enhance their human capital and teaching.

Decisional capital concerns how teachers make teaching-related judgments in their classrooms. To make the best teaching decisions, teachers need to practice and reflect on their experiences and knowledge learned from the research, experience, and colleagues. Hargreaves and Fullan (2012) emphasize learning from colleagues' experiences and insights as an essential way to strengthen decisional capital. Hence, social capital supports the development of decisional capital.

In conclusion, the three types of capital are integrated and connected. They represent different dimensions of teaching. Professional capital considers human capital (e.g., teachers' personal knowledge and skills), decisional capital (e.g., classroom practices), and social capital (e.g., interactions with others) as a whole to produce professional teaching. Using professional capital as a lens enables me to explore how program factors influence teaching and the use of standards. Specifically, it enables me to explore how program factors influence teachers' use and development of three forms of capital when

they decide how to use the WELLS. In addition, profession capital simultaneously considers individual teacher's important role in deciding how to teach and program environment's influence on teaching. This view aligns with my goal to explore factors that influence teachers' implementation of the WELLS and relationships between teachers' use of the WELLS and program environment.

Given that the goal of this chapter is to explore how program factors affect four case study teachers' implementation of the WELLS, below I introduce four case study teachers' program features. I then describe program factors' positive and negative influences on teachers' implementation of the WELLS using the analytic framework of profession capital.

Case Study Teachers

In this research project, I worked with four case study teachers—Lori, Joyce, Debbie, and Charlie--to understand how the Wisconsin Early Literacy Learning Standards (WELLS) were implemented in their classrooms. All the four teachers taught at private, non-profit childcare centers located in a large city in Wisconsin. They had taught children between the ages of 2.5 and 5 for varied periods of time. Below I introduce each case study teacher and describe his/her school and classroom including school's location, the students' family backgrounds, the students' ages, curriculum requirements, and daily schedules.

Lori and Her School and Classroom Characteristics

Lori works at Green Oak Childcare Center, which is located a few blocks away from downtown. Green Oak Center provides service for children ages 1 to 5 and offers flexible full-day and half-day programs. Parents can choose how many days a week and how many hours a day (part-time or full-time program) they want their children to attend.

Green Oak Center serves children from diverse socioeconomic backgrounds and more than 20% of the children qualify for free or reduced meals through the Federal Child and Adult Care Food Program (CACFP).

The director of Green Oak Center encourages teachers to use Wisconsin Model of Early Learning Standards (WMELS) for planning curriculum. According to Lori, one of the reasons for using the WMELS is that Green Oak Center participates in the Young Star, a child care quality rating and improvement system. Young Star recommends childcare programs to align their curriculum and assessments with the WMELS. In addition, Green Oak Center teachers are required to use a checklist based on the WMELS. This checklist is used to observe and evaluate children's learning (including literacy learning) and share their observations with parents. Green Oak does not follow a specific curriculum but has many curricular resources available in the main office. Creative Curriculum (Dodge, Colker, & Heroman, 2002) is one of these.

Lori has been a preschool teacher for three-to-four-year-old children for over 15 years and has been teaching in the same classroom—the Pine room. Almost all of her students are fluent English speakers. Some students also speak either Spanish or Mandarin at home. Lori's students are from varied income levels.

Lori works with two other lead teachers in the pine room, sometimes a few volunteers and student teachers. Pine room provides full-day and half-day programs available from 7:30 am to 5:45 pm. Most children attended the full-day program and the few children who attend the half-day program leave at noon. See Table 7.1 for Lori's daily schedule.

Joyce and Her School and Classroom Characteristics

Joyce works at Learning Garden Community Center, which is located a few miles

Table 7.1

Daily Schedule for Lori's Classroom

7:30 am - 8:30 am	Sign in and Discovery
8:30 am - 9 am	Circle Time/Morning Meeting
9 am - 9:30 am	Snack
9:00 am- 10:30 am	Free Choice /Small Group Activities
10:30 am - 11:30 am	Outdoor/Playground
11:30 am - 12:00 pm	Group Time
12:00 pm- 1:00 pm	Lunch/Small group Activities
1:00 pm- 3:00 pm	Nap/Small group Activities
3:00 pm- 4:00 pm	Snack/Free Choice
5:00 pm- 5:45 pm	Active Play/Clean-up

from downtown between a wealthy and a low-income neighborhood. Learning Garden Center provides service to 3 to 5-year-old children. Most children at the school are qualified for financial support from the center, school district, city, or county. According to Joyce, about a half of her students are English Language Learners and from families with mixed family income levels.

Learning Garden Center has a half-day 4K classroom and two full-day preschool classrooms. The center offers extended child care for children who attend the half-day program. For children in the morning 4K class who need extended care, they are divided into two groups and placed in the two preschool classes in the afternoon due to the 4K room being used by another elementary program in the afternoon.

Learning Garden Center encourages teachers to use the Creative Curriculum for planning, and requires teachers to use the Teaching Strategies GOLD assessment. Since the 4K classroom is supervised by the public school district, teachers are required to conduct *Phonological Awareness Literacy Screening (PALS)* and use the School District Report Card to evaluate their students.

Another feature of the Learning Garden Center is that they engage with outside resources and provide various types of learning programs including *Bridging the Gap* to promote Kindergarten school readiness (2 hours per week); the *SPARK* program for promoting physical movement (one hour per week); and a nutrition program for promoting nutritional awareness on diet (an half hour per week).

When the research began, Joyce had served as an afternoon teacher in the Rose room at Learning Garden Center for a year and four months. This was Joyce's first teaching job after receiving her associate degree in early childhood education. Joyce spent her mornings taking more courses in order to earn a bachelor degree and her 4K teaching license. Although her work schedule varied depending on administrative needs, she usually arrived at 1:00 pm and stayed until 5:30 pm. Rose room's daily afternoon schedule is presented in Table 7.2. In the Rose room, Joyce worked together with a lead teacher who stayed until 3:30 pm and another afternoon teacher who stayed until the end of the program.

Table 7.2

Afternoon Schedule for Joyce's Old Classroom

12:45 pm - 2:45 pm	Rest Time/Quiet Table Activity (for children who do not want to sleep)
2:45 pm - 3:30 pm	Snack
3:30 pm - 4 pm	Circle Time or Prescribed Programs
4 pm - 5:30 pm	Outdoor/Playground

During the second half of the research, Joyce was promoted to lead teacher for the 4K classroom—the Sunflower room. In the Sunflower room, Joyce worked with another lead teacher, Jenny, who had taught preschool for 24 years. The new class schedule began at 7:30 am and ended at 11:00 am (see Table 7.3).

Table 7.3

Daily Schedule for Joyce's New Classroom

7:30 am - 8:30 am	Sign in and Discovery
8:30 am - 9:15 am	Breakfast
9:15 am - 9:30 am	Circle Time/Morning Meeting
9:30 am - 10:30 am	Choice Time/Small groups/4K Academic Activity
10:30 am - 11 am	Outdoor Playground/Class Dismissed

Debbie and Charlie and Their School and Classroom Characteristics

Debbie and Charlie both worked at Sunny Hill childcare center, which is located in a suburban area in a middle-to low-income neighborhood. Sunny Hill Childcare center was newly founded and had opened for only two months before the research began. Similar to the other two centers, Sunny Hill provided flexible half-day and full-day programs and provided service to children from 12 months to age 5. Although Sunny Hill was new, their enrollment grew quickly from 5 to 15 children during the research period. They ran their school at a temporary location in a local church due to the reconstruction of their intended building.

At the beginning of the research project, there was only one class. Debbie and Charlie were both lead teachers of this class and worked with an afternoon teacher. Their daily schedule is illustrated in Table 7.4.

In the middle of the research, due to the growing number of students, Sunny Hill divided students into two classes. Charlie led a class by himself. Debbie was promoted to curriculum coordinator and occasionally supported Charlie's class. In Charlie's new class, he worked with children from ages 3 to 5. Most of the children at the Sunny Hill were from Latino or African-American families and they were all native English speakers. Sunny Hill followed the Creative Curriculum for lesson planning and required teachers to

use Teaching Strategies GOLD assessment to evaluate their students twice a year.

Table 7.4

Daily Schedule for Debbie and Charlie's Classroom

7:30 am - 9:00 am	Sign in and Discovery
9:00 am - 9:30 am	Circle Time/Morning Meeting
9:30 am - 10:00 am	Snack
10:00 am – 11:30 am	Free Play/Outdoor Playground
12:00 pm- 1:00 pm	Lunch/Small Group Activities
1:00 pm- 2:45 pm	Nap
2:45 pm- 3:30 pm	Snack/Free Choice/Project
3:30 pm- 5:30 pm	Free Choice/ Outdoor Playground

In summary, although all the four case study teachers taught at non-profit, private childcare centers, their program features showed commonalities and differences. All case study teachers taught in a mixed-age classroom. All the centers provided half-day and full-day programs. Most of them had to share their classrooms with other people, excluding Lori, who could freely decide how to arrange her classroom. Their daily schedules were alike, which included free-choice time, small group time, outdoor time, and circle time. However, the amount of time for each kind of activities varied. Although all of them used the Creative Curriculum as a resource for planning, only Debbie and Charlie's school required teachers to closely follow the Creative Curriculum to design daily activities. In addition, only Joyce's school partnered with multiple outside organizations and included prescribed curriculum programs in daily schedules. In addition, in the beginning of this research, Joyce was the only case study teacher working in the afternoon classroom and planning alone. During the second half of the research, three case study teachers adjusted their job responsibilities. Joyce was promoted to lead

teacher in a 4K room. Charlie stopped co-leading a class with Debbie and led a new class alone. Debbie was promoted to curriculum coordinator and occasionally assisted in Charlie's class. Table 7.5 illustrates summary information for the four case study teachers' backgrounds and school characteristics.

Table 7.5

Summary of Case Study Teachers' School and Classroom Characteristics

Teacher name	School name	Students' age group	Length of the class	Job title	Creative Curriculum
Lori	Green Oak	3-4	Flexible full day and half day	Lead teacher	Used as a curriculum resource
Joyce	Learning Garden	3-5	Half day (4K) with optional extended care	Afternoon teacher (first half of the research); lead teacher (second half of the research)	Use Benchmarks for assessment
Debbie	Sunny Hill	2.5-5	Flexible full day and half day	Lead teacher of River room (first half of the research); Curriculum coordinator (second half of the research)	Used for planning and assessments
Charlie	Sunny Hill	2.5-5	Flexible full day and half day	Lead teacher of River room (first half of the research) ; Lead teacher of Rainbow room (second half of the research)	Used for planning and assessments

The program features shown above indicated that each case study teacher was teaching in different program environment. Below I describe how program features influenced case study teachers' implementation of the WELLS. I analyzed these influences using the framework of professional capital. Specifically, l focused on

program policies related to six categories: (1) daily schedules, (2) numbers of teachers per classroom, (3) staff meeting, (4) field trips, (5) program environments and funding, and (6) professional development.

Program Factors and Teachers' Implementation of the WELLS

In this section, I discuss how program factors supported or restricted case study teachers' use of the WELLS. I argue that program factors (i.e., program policies, requirements, practices) informed what educational beliefs and knowledge were valued in the program (a dimension of human capital), what opportunities were available for teachers to collaborate (a dimension of social capital), and how teachers made decisions to use the WELLS (a dimension of decisional capital). Six categories of program factors showed explicit connections to teachers' use of the WELLS. These categories include daily schedules, numbers of teachers per classroom, staff meeting, field trips, program environments and funding, and professional development. Below I present examples of how teachers described program factors affecting their use of the WELLS using the analytic framework of professional capital.

It is notable that, although some factors might have brought additional positive and negative influences on teaching and accumulation of other forms of capital, I only present the influences that were reported by the case study teachers or observed during the data collection.

Category I: Program Factors Related to Daily Schedules

Unlike the rather strict daily schedule in Grades 1-12 classrooms, one of the main features of early childhood curriculum (kindergarteners and below) is its flexibility, which enables early childhood teachers to decide what they want to teach and for how long. Because of this flexibility, early childhood program administrators create unique

daily schedules and decide how many hours each week will be dedicated to literacy or math, how much time for outdoor play, and how much time for snacks. Depending on the center, early childhood teachers have different degrees of freedom to control the content and length of instruction. Fixed daily schedules affected the time available to teach what teachers wanted to teach and how they taught.

A relatively fixed daily schedule had a negative influence on Joyce's implementation of the WELLS. Unlike the other two childcare centers, Learning Garden was the only school that partnered with multiple outside programs and included them in their daily routines. These prescribed programs included *Bridging the Gap* (school readiness program), the *SPARK* program (physical movement), and a nutrition program. More than once during the interviews, Joyce identified these outside programs as challenging her ability to implement the WELLS. She explained that she had "no time to do activities" (Joyce, Feb 2016).

In addition, Joyce's chosen goal was to provide more reading opportunities for her students since she noticed that few children in her class went to the reading area and read. She focused her lessons on the third standard of the WELLS—children show appreciation of books and understand how print works--and tried in various ways to develop children's appreciation of books. However, when she worked in the afternoon program, she only had about 15-25 minutes on Mondays to read to her students (depending on how fast children finished their snack). She explained: "on Tuesdays and Thursdays, [children are having nutrition classes] and …Tomas (another afternoon teacher) [teaches Fridays' lessons]." (Joyce, Oct 2015). On Wednesdays children had their *Bridging the Gap* program.

When Joyce moved to the 4K classroom, she still felt time pressures. She was

especially concerned about her Thursday schedule. The available time for teaching (two hours) was shortened due to the adoption of *Bridging the Gap* program, which was arranged for the 4K morning class on Thursdays and afternoon class on Wednesdays. She said:

> A lot of teachers didn't want to do [*Bridging the Gap* program] because our time is so precious….When you take away breakfast...transition[s]…the time [for *Bridging the Gap* program]…and going outside, we only have a half hour [left] for teaching. (Joyce, Jan 2016)

In addition, the large numbers of transitions between programs shortened the amount of available time for teaching and impacted children's ability to concentrate on learning. Joyce noted that the frequent transitions between programs caused some of her students to take longer to focus on learning. She said:

> [In the morning, when Children] get here [they] take off their coats, eat breakfast, and have a circle time…An hour later…they put their coats back on [and go to a different classroom for *Bridging the Gap* program]…Two hours later, they put their coats back on [and come back to this classroom]…Then they nap,…wake up, [and go to] the afternoon [classroom]…Every 45 minutes they get dressed. That's a big problem for certain kids. (Joyce, Feb 2016)

Moreover, the large amount of time spent on these required programs limited Joyce's implementation of what she believed to be ideal teaching. For example, Joyce and her co-teacher designed small group activities during children's free play to help student improve skills such as writing their names or using scissors and glue. Although she tried to honor students' choice of activity, she could not provide time for children to choose what they wanted to do because there was only one hour available each day for small

group activities. The adoption of multiple prescribed curricula restricted Joyce's use of her human capital (in this case means Joyce's beliefs) to decide what was the best way to teach, which means that this program feature also limited Joyce's decisional capital. Since time was limited, teachers had to decide who could participate in the small group each day. She explained:

> We [have to] rotate kids [to different activity tables]…[My co-teacher] tries to get three or four [children to come to each table] at a time…There are 17 kids; that means [that] she has six different groups; [each group takes] fifteen minutes, so it would [take] an hour and a half…to get all [children] rotated [for one activity]. It takes Monday, Tuesday, Wednesday to get…[all children to experience all the three activities] (Joyce, Feb 2016).

Joyce added that if there were more teachers in her class, all the children could complete the same activity within a day. She wanted this to happen so that students could bring home the same artifacts each day. Although Joyce did not explicitly explain why it was important for students to bring the same artifact home, a possible explanation was her belief about fair and equal learning opportunities. Joyce might think that it would be unfair if only some students could share their artifact with their family and others could not.

Joyce's account indicates that daily schedule influenced not only the amount of time she could spend implementing WELLS related activities limiting her decisional capital but also the compromises she made between what she viewed as ideal practice and how learning arranged limiting her ability to draw on the knowledge of children and literacy, which means limiting her use of human capital.

Category II: Program Factors Related to the Numbers of Teachers Assigned to Each

Classroom

Joyce expressed the need for more teachers in her classroom so that her students could receive more one-on-one support. Interestingly, Charlie shared a similar request. Both Joyce's and Charlie's experiences reveal how under-staffing negatively influenced how they planned and taught.

Not having enough teachers in the classroom restricted the amount of support children received and the effectiveness of instruction. Teaching alone also limited Charlie's access to his co-teacher's knowledge and assistance and hence restricted his use of social capital. In the middle of study, Charlie's original co-teacher was promoted to become the curriculum coordinator and Charlie was assigned to lead a class by himself. Although Charlie's class met the staff-student ratio required by the Wisconsin Department of Children and Families (1:8), Charlie felt that it was challenging to teach students with such a wide range of learning levels. He explained that while he wanted to engage all the children in learning activities, some children. . .

> had a very solid background in a lot of things…[Others are] younger (2.5 year olds)… [Some need]… rigid [instruction]…and [some]…are very quiet…Every kid has their personalities and their own path of learning. (Charlie, Feb 2016)

Comparing my observations from Charlie's co-teaching class with observations from his solo-teaching class, it was very obvious that being the only teacher in the classroom influenced Charlie's effectiveness of teaching. When teaching on his own, Charlie often sought a balance between responding to individual needs and the whole group's needs. For example, when he was telling a story about lights and shadows using a projector, he turned off the lights. A couple children got too excited and screamed loudly. Charlie had to stop the story to respond to this interruption. Another day, when Charlie was

performing finger rhymes during circle time, a girl screamed because her spot was taken by another child. She was so angry so that she hit Charlie with a book. Of course, Charlie had to stop instruction and discuss with the girl, one-on-one, about how to deal with her frustration. This meant that other children had to wait. Charlie summarized his experience saying "if you spend so much time fighting with one particular kid, you're going to lose your other group" (Charlie, Feb 2016).

In contrast, these types of interruptions seldom happened in Charlie's previous classroom since Charlie had support from his coteacher. Charlie's case reveals the importance of rethinking how the policies concerning the number of teachers per classroom might serve as a form of social capital and hence affect the effectiveness of teaching. When discussing what should be the appropriate number of teachers per classroom, the conversation should move beyond required staff-student ratios to how the policies influence instruction and learning.

Both Joyce and Charlie's examples indicate that having fewer co-teachers in classrooms restricted the ways they implemented the activities, the amount of time needed for each activity, and the effectiveness of instruction. Charlie's situation also highlights the importance of cooperation between teachers, a dimension of social capital. Charlie's teaching was smoother and involved fewer interruptions with Debbie's support. Program policies that involve collaborative planning was a third category of program factors identified in the data.

Category III: Program Factors Related to Curriculum Planning Meeting: Cooperation with Other Teachers

To support teachers' collaboration, some programs utilized staff meetings as spaces where teachers and administrators collaborated and worked together. Weekly planning

meetings provided opportunities for teachers to communicate their knowledge and expectations about students, and support each other. Weekly meetings provided opportunities for teachers to interact with each other and develop social capital; accumulate professional experiences and knowledge and increase human capital through collaborating with colleagues; and be able to make better decisions about teaching and increase decisional capital using their new learned human capital from colleagues.

Regular curriculum planning meetings enabled communication between teachers about what and how they taught. All the four case study teachers participated in weekly meetings in which they discussed their lesson plans with their co-teachers. When they decided to implement a particular WELLS standard or activity, they had to communicate with their co-teacher. Teachers who were more senior like Lori and Debbie seemed to have more control on deciding what to teach. Teachers like Charlie and Joyce who were less experienced seemed to have to follow senior teachers' decisions and sometimes give up what they wanted to teach. For example, Joyce mentioned multiple times that she wanted to set up a writing center (Joyce, Oct 2015; Jan, 2016; Mar, 2016) but she could not do so because her co-teacher disapproved this idea. Joyce said, "[my coteacher] doesn't want to make a big change in the middle of the semester, so maybe next fall, we will rearrange it (the classroom)" (Joyce, Jan, 2016). This finding indicates that teachers' social capital influenced how they implemented the WELLS. Below I describe various ways co-teachers collaborated and explain how staff meetings supported or restricted teachers' use of the WELLS.

Lori and her two co-lead teachers met weekly to make curricular plans and share their observations about children. They discussed children's learning challenges and adjusted their teaching plans accordingly. Lori shared activities that she learned from the

WELLS (e.g., alphabet bingo and writing in shaving cream) with her coteachers. To Lori, collaborative decision making about what to teach was more important than what she was personally interested in teaching. Lori would propose ideas during staff meetings but she was fine if her ideas were not taken up. The interactions within staff meetings decided what would be taught in the classroom. Staff meetings were a space where teachers exchanged their human capital including knowledge and beliefs, and made professional decisions about what to teach. Lori's interactions with co-teachers also indicated that Lori and her colleagues respected each other's thoughts and utilized their social capital to learn from each other.

In some cases, program's adoption of curriculum models restricted the content of teaching. Charlie and Debbie also had weekly planning meeting. Unlike Lori and her co-teachers who made teaching decisions based on their observations and discussions, Charlie and Debbie followed the Creative Curriculum (Dodge, Colker, & Heroman, 2002), which was the school curriculum model. Although Charlie and Debbie identified activities from the WELLS that they were interested in implementing in their classroom, they generally followed the Creative Curriculum to establish curriculum themes and make day to day plans. Although Charlie and Debbie did not explicitly mention limitation from adopting the Creative Curriculum, it was possible that Charlie and Debbie might sometimes need to give up what aligned with their beliefs or knowledge about students in order to follow what were addressed in the Creative Curriculum. In other words, the adoption of a particular curriculum model might restrict teachers' use of their human capital to make the best decisions to support their students. This reasoning probably explained why Charlie and Debbie narrowed their choices about curriculum themes into the ideas addressed in the Creative Curriculum. Even so, Debbie believed that the

Creative Curriculum was equally as developmentally appropriate as the WELLS, which aligned with her beliefs, a dimension of human capital. She believed that Sunny Hill could just follow the Creative Curriculum to meet the expectations recommended in the WELLS. She argued that the WELLS was not designed for curriculum planning but "[as] a [common] language across the board in Wisconsin for all early childhood people [to] understand and be familiar with"(Debbie, Jan 2016).

Like Lori and her co-teachers, when Debbie and Charlie co-taught, they decided together which activities recommended by the Creative Curriculum they implemented each week. Staff meetings for them were opportunities to develop and use their social capital to exchange thoughts and learn from each other, although it was understandable that Charlie followed Debbie's suggestions more often than the other way around because of Debbie's 30 years of teaching experience in early childhood education.

Since Debbie and Charlie planned together, they were able to support each other. When Charlie was teaching alone, he addressed curriculum themes chosen from the Creative Curriculum by the staff at Sunny Hill. Still, he had some freedom to choose and teach activities that aligned with his students' ability and interests. During the second half of the research, most of Charlie's activity ideas came from the Creative Curriculum and seldom reflected the WELLS. Under the influence of policies relative to curriculum adoption, this finding suggests that Charlie used his human capital to decide not to include the WELLS in his curriculum. Although Charlie did not directly use the WELLS for planning activities, he believed that the developmental continuum presented in the WELLS was helpful. He explained, "since I [used to teach] the higher [grade level] kids, I only [knew] higher end stuffs (expectations); It was kind of nice to see the whole spectrum" (Charlie, Mar 2016). This finding indicates that although the adoption of the

Creative Curriculum and interactions with colleagues did limit Charlie's use of human capital to decide what to teach, Charlie used his human capital to decide which part of the WELLS was more helpful. By reading the WELLS, he also increased his human capital including knowledge about child development.

Other teachers reported that a lack of collaboration restricted their access to colleague's human capital, specifically knowledge about student learning. Joyce' case, again, was unique, especially when she served as an afternoon teacher. In the afternoon program, she worked with two other teachers (one afternoon teacher, one lead teacher). Unlike other case study teachers, Joyce did not have opportunities to plan with other teachers. She planned the afternoon program alone because Learning Garden did not implement staff meetings for lead teachers and afternoon teachers. Joyce tried to discern what her students had learned in the morning program because she believed that teaching should build on children's prior experiences. She said: "unfortunately we do not get planning time together…so I [tried to] get any chances to talk with [lead teachers] about what we can plan for the next week", and tried to "read what [lead teachers] wrote down [on the planning book/calendar]" (Joyce, Oct 2015).

To Joyce, not being able to plan with other lead teachers brought challenges to her implementation of the WELLS. Since one of her goals was to engage her students in reading, not knowing their learning experiences in the morning hindered her selection of appropriate books. Joyce explained, "[knowing] their favorite books would be good because we have a lot of kids [who] I don't work with in the morning…and to get to know their favorite books would be kind of a goal" (Joyce, Nov 2015). She added "there is only one adult and all the kids…I always had that problem [about] how [to] decide which book to read, because they all want a different book" (Joyce, Nov 2015).

Joyce's experience indicates that the staff meeting policies in Joyce's school influenced the opportunities available for teachers to collaborate with each other and access colleagues' human capital; to develop her human capital including knowledge about student learning; to carry out activities that aligned with her human capital; and to make the best decisions about what learning materials (e.g., books) to include in the classroom.

While collaboration generally enhanced teachers' professional development, working with student teachers could restrict teachers' available time for teaching and choice in topic selection and limit teachers' decisional capital. For example, Lori had two student teachers in her class. The student teachers' schedules and needs influenced Lori's curriculum planning. Lori's amount of available teaching time decreased when the student teachers needed time to complete their assignments. Sometimes these assigned activities were inconsistent with the children's interests and/or developmental level. Regardless, Lori allowed her student teachers to teach these activities because she knew that her student teachers were required to do so. The examples shown above suggested that teachers' social capital could negatively influence how teachers implemented the WELLS.

Category IV: Program Factors Related to Field Trip Policies

Field trip policies also affected case study teachers' use of the WELLS. Thanks to program policies that did not restrict the number of field trips, available funding, and the ideal location of the center, Lori was able to engage the children in learning outside of classroom by taking buses or walking around the neighborhood. Lori believed that being able to visit different learning environments created opportunities to explore new things and learn new words. Lori described how she introduced new vocabulary during a field

trip:

> We went to [the State Office Building]. We talked about different things we saw there, like the marble, the statue set on the wall…There is construction going on nearby, so we talked about that too…We talked about a bunch of new vocabularies, like mask, and how the mask glue on the plastic stick…We talked about "meetings" when we are inside of the building…I said, you have to use inside voice because many people are working and having meetings. One kid asked what is a "meeting"? So I said, meeting is maybe they are sitting at a table with chairs and talking about to fix something or how they gonna work together to complete an activity or, maybe they are taking notes about what to do next for their job (Lori, Nov 2015).

Lori also took her students to visit a local library, which was one of the activities recommended by the WELLS. Having flexible field trip policies was not true for all the teachers. Although Joyce loved the idea of taking children to visit a library, she was not able to use resources outside of the school for multiple reasons: the weather was too cold; it was not part of school's plan, and the local librarian was on maternity leave. Lori and Joyce's cases suggest that program's policies about field trip influenced teachers' ability to carry out what they wanted to teach. That is, teachers might not able to follow their human capital to design their ideal curriculum.

Category V: Program Factors Related to Resources—Physical Environments and Funding

The types of resources available in each program including books, funding, and number of classrooms negatively and positively affected the degree to which teachers implemented the WELLS. For some teachers, a limited number of books restricted the topics addressed and the frequency of reading. As mentioned in the previous section,

Joyce chose to focus on the Wisconsin standard of children's appreciation of books. To achieve this goal, she wanted to provide a variety of books aligned with children's interests. Since the books available at the Learning Garden were not enough, she had to bring in books from home so children would not get bored. She explained, "We have a very limited budget, so…I donated a bunch of books that I have at home…They (the children) were really excited about new books; They always seem to like something different…to look at" (Joyce, Dec 2015). Although it was fortunate that Joyce could use her personal resources to support her teaching goal--improving children's appreciation of books, it was still true that having limited resources at the center (in this case, limited number of books) restricted Joyce's human and decisional capital. Joyce had to compromise what she believed as ideal teaching (i.e., reading books that aligned with students' interests), which hindered her plan to incorporate the WELLS goal into her curriculum.

Adequate funding and learning materials enabled teachers to teach target activities and enact their commitment to providing rich learning environments. Offering more books was also one of Lori's literacy goals. Unlike Joyce who brought in her own books, a local librarian brought a box of 24 books to Lori's class every month. To encourage children to read books, the librarian even offered children a prize if they read 100 books. With a rich collection of books available in the school and support from the local librarian, providing books was never a concern for Lori. Lori's curriculum was enriched because of her use of social capital to connect with the local library.

Lori's school also had adequate learning supplies. To ensure teachers could teach the activities they wanted, each classroom was given $400 a year to purchase learning materials. Lori almost never used this money since she received sufficient resources from

the center. Still, this benefit ensured Lori's freedom to design activities without financial concerns. Lori could easily obtain materials needed (e.g., magnet letters, shaving cream) when implementing activities from the WELLS. Lori's decisional capital was supported because she could freely decide what WELLS activities she wanted to teach without worrying the accessibility of learning materials.

Having adequate resources enabled Lori to enact her educational beliefs and align teaching with her human capital, e.g., her commitment to offering safe, inviting, and meaningful learning environments. She said, "I believe children learn best when they are in safe, warm, and welcoming environment[s] …[where] teachers…are excited to be at work [and] they are excited to teach" (Lori, Oct 2015). Lori believed that children learn best through play, so for free-play time she selected and provided learning materials that were engaging, safe, and challenging. For example, if children already mastered certain puzzles, Lori replaced them with more challenging ones. Lori also replaced learning materials based on children's interests and life experiences. For example, after coming back from a field trip observing a construction site, Lori added books related to construction vehicles to satisfy students' interests. Lori created learning opportunities for students by offering different kinds of materials, which aligned with her beliefs (a dimension of human capital). She was able to do so because she used her social capital to access the resources available at her school and at the local library.

In some cases, shared classroom spaces limited teachers' decisional capital including choice of activities and how they displayed learning materials and children's work. Interestingly, Joyce, Charlie and Debbie shared their classrooms with other people or programs. Joyce's 4K classroom was shared with an afterschool program, which created limitations for her. For example, she could not display children's work on the wall and

she was not sure whether she could rearrange learning centers and move materials around. She worried if she did not take down the posters that displayed the books of the week, the afterschool students would tear the posters. Sadly, Joyce did not have opportunities to communicate with the afterschool teacher. She said:

> I don't actually get to see the afterschool teacher to talk about these things but I'm hoping that eventually I can sit down with her and say how you feel about moving around stuffs and putting stuffs on the walls…A lot of [times]…we put some pictures up in the door. They (afternoon kids) put them down…It's not a perfect system. (Joyce, March 2016)

Moreover, sharing the classroom with the afterschool program also meant that children in the 4K program who needed extension services were placed into a different classroom in the afternoon. Joyce pointed out that it took children a lot of time to become familiar with the new environment and to make new friends:

> They are making relationships to each other, they are not together in the morning, and then they come together in the afternoon, it is like a different energy because it is a different group [and] different mixture of personalities. (Joyce, Oct 2015)

Joyce also identified this transition as one of the reasons that children could not focus on story book reading, which prevented children from achieving her goal to support children's appreciation of books (WELLS Performance Standard Three). This kind of policy also did not align with Joyce's beliefs, a dimension of human capital. Joyce explained: "I think it is a lot to ask a 4-years old to be in an 8-hour program.…I think it is hard to focus if you are tired, hungry, having challenging mornings, [or] had issues with other children" (Joyce, Oct 2015). The frequent transitions between activities also affected Joyce's effectiveness of teaching.

Since Charlie and Debbie's school was under construction, they were teaching in a temporary space. They chose not display too many learning materials in the classroom and not to do certain types of activities to keep the space clean. Charlie explained:

> Once we get to our new school, we'll have more room…[and] have more activities for them to do because we're kind of limited in the church here. There's only so much we can do as far as activities just because we don't have…a sink in my room, you're kind of conscious of what you do as far as like art activities…because it's somebody else's space and you don't want to make a huge mess. So, even [though]…I would like to have more things (materials) [in my class] and would like to be able to change some things out more often, [I can't].…We don't have any storage space here either. (Charlie, Feb 2016)

The examples presented above indicate that a school's available resources, including physical environments, affected how teachers used their decisional capital to implement the WELLS (e.g., if teachers had enough materials to teach), and how teachers activated their human capital (e.g., supporting children's appreciation of books, creating inviting learning environments, and providing children's interested books).

Category VI: Program Factors Related to Professional Development Opportunities

Supportive policies for professional development created opportunities for teachers to interact with others and develop social capital; improved teachers' human capital including knowledge of literacy; and increased teachers' decisional capital so that teachers could bring new activities or pedagogies to classrooms. During interviews, Lori mentioned changing her classroom environment based on what she learned at educational workshops. For example, Lori stated that the way she supported children's writing (WELLS Performance Standard Four) was to display more posters and name cards

because a presenter recommended referencing children's written names at least ten times to encourage children to recognize their names. These examples showed that Lori increased her human capital through interacting with others, a dimension of social capital. The new learned knowledge then influenced her decisional capital, in this case, how she planned her curriculum.

Sometimes, the knowledge that Lori encountered in the workshops made her question how she taught. For example, one presenter advised teachers not to use dot-tracing letters to teach children how to write; another presenter said not to provide coloring sheets for children because this would suppress their creativity. Advice from these presenters challenged Lori's literacy beliefs and created opportunities for Lori to reflect on the activities she provided. Lori's human capital was hence changed because of her learning of literacy knowledge.

In addition, the director of Green Oak Center influenced how Lori used the WELLS. Lori mentioned that the previous director of the center required every teacher to use the WMELS-based checklist (WELLS is part of the WMELS) to observe children every day and to compile their observational notes into learning portfolios. Although the current director did not require teachers to use the WMELS on a daily basis, she encouraged them to use the WMELS for curriculum planning and to communicate with parents.

Since the director of Green Oak supported using the WMELS, every teacher in Lori's center was given a copy of the WMELS book. The director also supported Lori's professional development by allowing her to use her teaching time to participate in my research and funding a substitute teacher for her class while she was absent for my interviews. Although all the directors at the sites showed supportive attitudes toward their participation in my research, Charlie, Debbie, and Joyce needed to use their planning

time to meet with me and used their personal time to plan their lessons. Charlie and Debbie could at least support each other's classes if their interviews with me went long or something unexpected happened. Joyce often had to shorten her interviews or teaching observations due to necessary job duties. Limited time for participating in my research project limited her opportunities to share her beliefs about the WELLS and reflect on how the WELLS could be used to support her students. Not having enough time also explained why Joyce's surveys were incomplete. Although she appreciated the opportunity to learn about the WELLS, without supports from the center, she was overwhelmed by her job duties and participating in the research project. Joyce's case suggests that with limited support from the director, Joyce had fewer opportunities to access her social capital and develop her human capital.

Conclusion and Discussion

With the pervasive adoption of learning standards in early childhood programs, researchers have tried to understand how teachers use learning standards in their classrooms and identified factors that influenced teachers' implementation. Although it is commonly accepted that teachers' beliefs are associated with their uses of learning standards, more and more scholars have reminded us of the influential role that context plays in mediating this association (Jamalzadeh, & Shahsavar, 2015; Lawrence, & Lentle-Keenan, 2013). This chapter explored how four case study teachers reported using the Wisconsin Early Literacy Learning Standards (WELLS) in their classrooms. Specifically, I described how program features influenced their implementation of the WELLS in relation to three dimensions of professional capital. Professional Capital (Hargreaves & Fullan, 2012) was used to explore how program factors influenced teachers' use and development of the three forms of capital when they decided how to use

the WELLS. The findings presented in this chapter can be used to understand how program factors negatively and positively influenced teachers' reported use of the WELLS.

The results discussed above reveal that teachers with more supportive programs (e.g., Lori) reported being more able to implement activities that aligned with their human capital, e.g., beliefs, curriculum goals, commitment; had more opportunities to develop their social capital, e.g., interacting and planning with others; and had more opportunities to expand their human capital, e.g., knowledge and skills about literacy. Teachers whose program had more strict and fixed requirements and inadequate resources (e.g., Joyce) experienced conflicts of beliefs between program requirements and their human capital. Teachers with less supportive programs also identified restrictions on what activities they were allowed to teach and how much time was available to teach these activities. Their decisional capital was restricted and they could not use their professional judgments to decide what to teach. Their curricula were more likely not aligned with their human capital. Some teachers also reported fewer opportunities to develop their social capital, e.g., attending professional development workshops, and collaborating with other teachers.

The findings suggest that teachers who work at a more supportive program, they are likely to have more opportunities to develop their professional capital. Teachers who worked at a less supportive program, the opportunities to improve their professional capital were relatively limited. In Figure 7.2, different sizes of gray circles represent different number of opportunities available for teachers to improve their professional capital. The blue arrow represents different levels of support that each program provides to their teachers. The bigger the circle is the more program support they receive and the

more opportunity for teachers to grow their professional capital is.

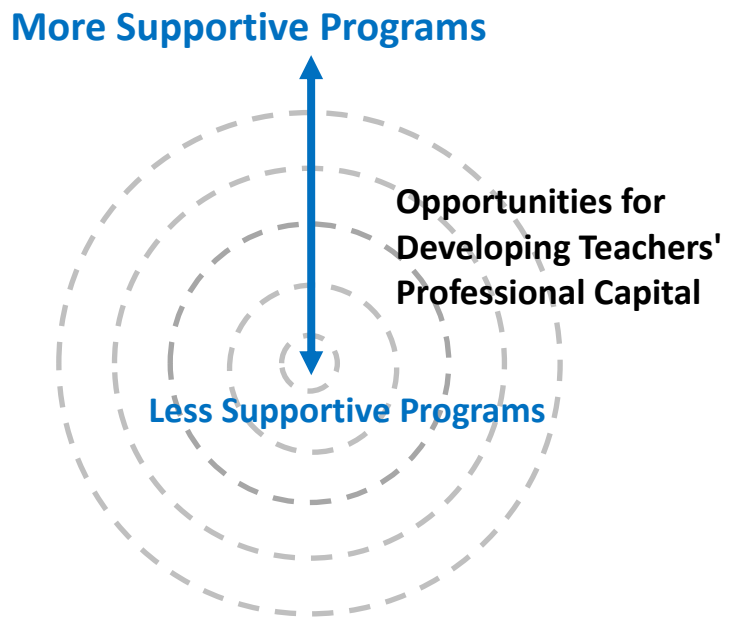

Figure 7.2. Program factors influence teachers' development of professional capital.

Figure 7.3 illustrated how teachers reported that program factors supported or limited their use of the WELLS in relation to three dimensions of capital—human capital, decisional capital, and social capital. Program factors that were identified as supporting teachers' implementation of the WELLS include: supportive co-teachers, regular staff meetings, flexible field trip policies, adequate learning materials and funding, and supportive professional development policies. Program factors that were identifies as limiting the development of teachers' use of the WELLS include: fixed daily schedules, inadequate staffing, the lack of staff meetings between lead teachers and afternoon teachers, mentoring student teachers, fixed field trip policies, shared classroom spaces, inadequate resources and funding, and the lack of supportive professional development policies.

In Figure 7.3, green, orange, and pink arrows indicate both the positive and negative

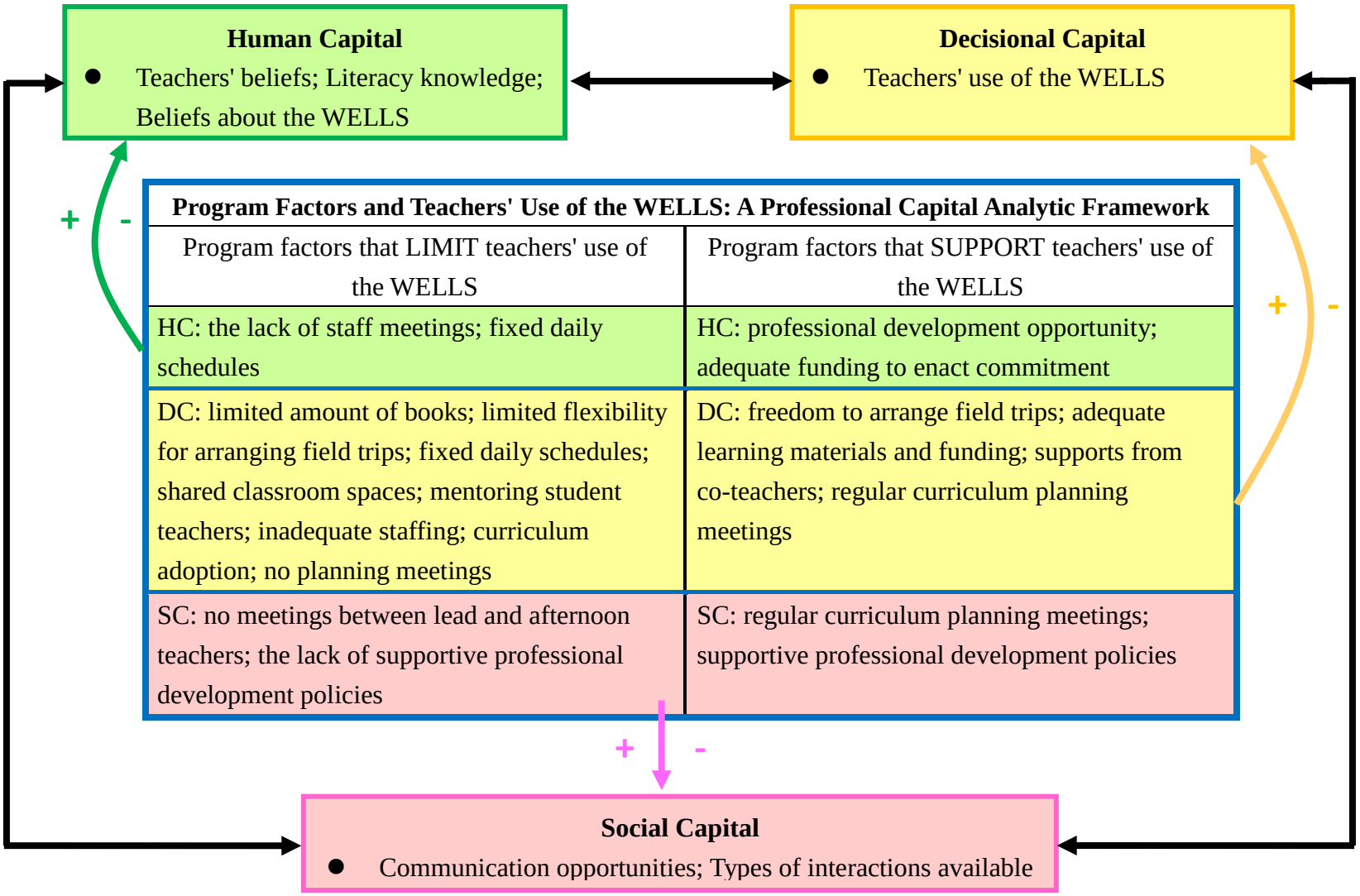

Figure 7.3. Program factors and positive and negative influences on teachers' use of the WELLS: Professional capital as the analytic framework.

influences that program factors had on each form of capital when teachers implemented the WELLS; The Green arrow represents program factors that had either positive or negative influence on the human capital. Program factors that positively affected teachers' human capital include: supportive professional development policies and adequate funding. Program factors that negatively affected teachers' human capital include: the lack of staff meetings and fixed daily schedules.

The Orange arrow represents the positive and negative influence program factors had on decisional capital. Program factors that positively affected teachers' decisional capital include: freedom to arrange field trips, adequate learning materials and funding; supports from co-teachers, and regular curriculum planning meetings. Program factors that negatively affected teachers' decisional capital include: limited numbers of books, limited flexibility for arranging field trips, fixed daily schedules, shared classroom spaces, mentoring student teachers, inadequate staffing, mandated curriculum, and no planning meetings.

The Pink arrow represents program factors' positive and negative effect on social capital. Program factors that positively affected teachers' social capital include: regular curriculum planning meetings, and supportive professional development policies. Program factors that negatively affected teachers' social capital include: no meetings between lead and afternoon teachers, and the lack of supportive professional development policies

Each program factor could both negatively and positively affect one or more forms of capital. For example, policies related to professional development opportunities affected teachers' accumulation of social capital--e.g., opportunities to interact and learn

from other teachers, human capital--e.g., improving knowledge and skills of teaching, and decisional capital--e.g., applying what they learned in the workshops in their classrooms.

Since the three forms of capital are interactive and connected, black arrows represent the interactive relationships between them. Interactions between human capital (e.g., what teachers think and know) and decisional capital (e.g., how teachers use their professional judgments to make decisions) were discussed in the Chapters 5 and 6. Although the interactions between human capital and social capital, and decisional capital and social capital were observable in the case study data, they were not the foci of this research project. For example, how teachers' collaboration with others (a dimension of social capital) influence teachers' understanding of literacy and the WELLS (a dimension of human capital), and how they implemented the WELLS (a dimension of decisional capital); or, how teachers' decisions on using the WELLS influence their interaction with others including colleagues and parents (a dimension of social capital). More research studies are needed to examine and provide empirical evidence to understand interactions among different dimensions of capital. This chapter highlights the importance of program factors in relation to how they reportedly affected teachers' use of the WELLS and access to and development of professional capital. By presenting program factors' influences on teachers' use of the WELLS, this chapter suggests the need to create a supportive work environment to support teachers' continuous investment in their professional capital and hence improve the quality of teaching.

Chapter 8 Conclusion

Standards-based education has become an influential focus in early childhood education. All 50 U.S. states and the District of Columbia have approved early learning standards for three-to-five-year-old children. Early literacy is one of the learning areas that has been emphasized in these standards. Early literacy learning standards highlight essential early literacy skills and knowledge that young children should learn and do. Early childhood teachers are encouraged or required to apply these standards in their classrooms to improve children's literacy learning. Studies have shown that teachers' role is one of the main factors that influences the implementation of learning standards.

However, since most of states' early learning standards have been developed and used in early childhood education for only a decade, few studies have discussed how teachers use early literacy learning standards in their classrooms. In addition, no study has yet explored teachers' decision-making processes related to their use, or not use, of learning standards. This research project recognizes teachers' important role in the era of standards-based education and explores how teachers' beliefs and literacy practices are associated with their application of a set of early learning standards—the Wisconsin Early Literacy Learning Standards (WELLS). Professional capital (Hargreaves & Fullan, 2012) was used to understand how human capital, decisional capital, and social capital contributed to teachers' use of standards.

This research project utilizes a mixed-method approach that combines survey research with a case study. 90 survey teachers and four case study teachers participated. Through interviews with case study teachers, I analyzed their beliefs before, during, and after their formal encounter with the standards. I was able to learn the rationale behind

teachers' teaching decisions and factors that influenced their implementation of the standards.

This chapter consists of four sections. I first describe the findings found in each findings chapter (Chapters 4-7). Next, I discuss significance, implications, and limitations of this research project.

Findings Related to the Content Analysis of the WELLS

In chapter 4, the results of content analysis show that the WELLS are comprised of *performance standards, developmental continua, levels of performance, sample behaviors of children,* and *sample strategies for adults.* WELLS addresses four *performance standards,* which indicate four literacy areas that young children should be able to do, including:

1. Develops ability to detect, manipulate, or analyze the auditory parts of spoken language.
2. Understands concept that the alphabet represents the sounds of spoken language and the letters of written language.
3. Shows appreciation of books and understands how print works.
4. Uses writing to represent thoughts or ideas.

(Wisconsin Department of Public Instruction, 2014, p. 43)

Developmental continua identify several progressive performance levels for children to achieve each performance standard. A total of 34 performance levels are provided in the WELLS. *Sample behaviors of children,* and *sample strategies for adults* provide sample activities and teaching strategies. A total of 273 samples are provided in the WELLS.

I included the information about the WELLS in PowerPoint slides, which were provided to case study teachers when I formally introduced the WELLS to them. The introductory slides served two purposes: (1) to build a baseline and shared understanding of the WELLS for case study teachers, and (2) to create opportunities for case study teachers to explore connections among their literacy beliefs, literacy practices, and the WELLS. The findings presented in this chapter can also be used as a resource for teachers who are interested in learning and using the WELLS.

Findings Related to Patterns of Survey Teachers' Reported Beliefs and Use of the WELLS

In chapter 5, to understand the relationships between teachers' beliefs and their implementation of the WELLS, I analyzed 90 Wisconsin early childhood teachers' survey responses to 26 WELLS related statements. Teachers were asked about their level of agreement with the statements and how frequently they implemented activities that were related to these standards in their classroom. In Chapter 5, I reported (1) patterns of teachers' beliefs related to the WELLS, (2) patterns of teachers' reported instruction related to the WELLS, and (3) the relationships between teachers' beliefs and reported teaching practices. I discussed teachers' reported beliefs and practices in five literacy areas based on the WELLS framework. These areas include (1) sound detection and manipulation, (2) phonics and word study, (3) book handling and concepts of prints, (4) writing, and (5) literacy environments. I utilized cumulative frequency analysis to explore patterns of teachers' reported beliefs and instruction. The percentage of the teachers who reported positive attitudes toward the 26 statements varied from 2.22% (children should do worksheets) to 98.89% (teachers should set up a reading area in the classroom). A few

factors might cause this variation including teachers' beliefs about developmentally appropriate practices, play-based learning, and knowledge of development (age appropriateness).

Similarly, the reported frequency of implementing activities related to the 26 statements varied. The most frequently reported implementing activities were reading picture books (94.4%) and providing a reading area (94.4%). The least frequently reported implementing activities were doing worksheets and homework. Over 50% teachers reported that they never provided worksheets or homework to their students. A few factors might have caused this variation including whether these activities were believed to be mandatory, age appropriate, and aligned with teachers' beliefs or knowledge of literacy.

I used Multidimensional scaling (MDS) to identify patterns of teachers' beliefs about the WELLS. MDS results show that three continua (literacy beliefs) can be used to describe teachers' beliefs about the WELLS: (1) creating learning environments vs. outcomes-oriented learning, (2) strict/traditional instructional approaches vs. problem-solving instructional approaches, and (3) skills-based learning vs. context-oriented learning.

Pearson correlation was used to examine relationships between teachers' beliefs and reported practices. The results showed that almost all 26 of the pairwise correlations between teachers' beliefs and their reported implementation were significantly positive. That is, if teachers’ attitude toward a statement were more positive, they were more likely to report that they spent more time implementing related activates; and vice versa.

Findings Related to Case Study Teachers' Patterns of and Changes in Literacy

Beliefs and Use of the WELLS

To support the argument that teachers play an influential role in deciding how to implement standards, I explore teachers' literacy beliefs since their beliefs are likely to connect to their use of the standards. Two surveys were sent to the case study teachers to document their before and after beliefs and reported practices related to the WELLS. I used MDS and scatter plot to describe case study teachers' literacy beliefs. Results showed that at both time points, the case study teachers had different literacy beliefs. When comparing pre/post case study teachers' literacy beliefs, they had changed their literacy beliefs in various ways.

By examining case study teachers' agreement scores and their implementation frequency scores on the 26 WELLS related statements, I find that in most survey responses, case study teachers' beliefs positively correlated with their reported implementation. That is, if case study teachers expressed higher level of agreement to a particular statement, they were more likely to report frequently implementing activities related to this particular statement; and vice versa. However, there were a few responses that revealed inconsistency between teachers' beliefs and practices. This finding suggests that there were other factors such as program factors might influence teachers to teach what they believed and valued.

Case study teachers were interviewed and asked to provide rationale for their reported literacy practices. Both WELLS related and non-WELLS related literacy beliefs were used to explain how case study teachers used the WELLS. Case study teachers generally justified their teaching decisions based on non-WELLS related literacy beliefs. They decided to implement or not to implement particular WELLS related activities

based on their knowledge of child development, knowledge of literacy, knowledge of children's interests, personal beliefs, personal teaching experiences, and knowledge of school requirements. Case study teachers also described that the WELLS influenced their practices in several ways: (1) WELLS as a resource for curriculum planning (2) WELLS as a reflective tool for improving teaching, (3) WELLS as a communication tool for parents. In addition, case study teachers argued that the WELLS was lengthy and they provided suggestions for incorporating the WELLS into teaching.

These findings reveal that (1) teachers display their unique literacy beliefs at both time points, (2) teachers' literacy beliefs change in various ways, (3) teachers report varying literacy practices over time, and (4) teachers' literacy beliefs, both WELLS related and non-WELLS related, affect how they use the WELLS.

Findings Related to Program Factors' Influence on Case Study Teachers' Use of the WELLS

Chapter 7 explores how program features affected how case study teachers used the WELLS. I highlight six categories of program factors that positively or/and negatively affected at least one case study teacher's use of the WELLS. These six categories include (1) daily schedules, (2) numbers of teachers per classroom, (3) staff meetings, (4) field trips, (5) program environments and funding, and (6) professional development. I used the lens of professional capital to discuss how program factors influenced teachers' implementation of the WELLS. Program factors that positively affected teachers' development of and access to social capital included: supportive professional development policies and adequate funding. Program factors that negatively affected teachers' development of and access to human capital included: the lack of staff meetings

and fixed daily schedules.

Program factors that positively affected teachers' development of and access to decisional capital included: freedom to arrange field trips, adequate learning materials and funding; support from co-teachers, and regular curriculum planning meetings. Program factors that negatively affected teachers' development of and access to decisional capital include: limited amount of books, limited flexibility for arranging field trips, fixed daily schedules, shared classroom spaces, mentoring student teachers, inadequate staffing, curriculum adoption, and a lack of planning meetings.

Program factors that positively affected teachers' development of and access to social capital included: regular curriculum planning meetings, and supportive professional development policies. Program factors that negatively affected teachers' development of and access to social capital include: no meetings between lead teachers and afternoon teachers, and the lack of supportive professional development policies.

These findings showed that program factors influenced teachers' use of the WELLS including how they thought, what they valued, how they designed and instructed lessons, and how they collaborated with colleagues. Teachers who worked at a supportive program were more likely to implement WELLS based on their beliefs without other concerns. They also had more opportunities to develop their professional capital and hence improve their literacy instruction.

Significance of This Research Project

This research project contributes to early childhood education in three ways. First, this research project complements the insufficient amount of literature related to standards. Although standards-based education has become an increasing focus in early

childhood education, only a few studies have discussed how early literacy learning standards might affect teaching practices. To the best of my knowledge, no study has explored early childhood teachers' responses before, during, and after their intensive work with a state's early learning standards. Most of the current studies explored teachers' beliefs only after they have used standards for a while. In addition, when exploring how teachers use standards, only a few studies have simultaneously considered multiple dimensions of teaching: human capital (e.g., knowledge and beliefs about early literacy), decisional capital (e.g., classroom literacy planning and instruction), and social capital (e.g., interactions with others). Most of the studies either focused on teachers' beliefs or their implementation of the standards. Moreover, the studies that examined teachers' use of the standards only collected numerical or descriptive types of data. By using a mixed-method approach that combines survey research with a case study, this research project explored teachers' implementation of the standards in a more comprehensive way.

Second, this research project helps us gain a better understanding of teachers' literacy beliefs and classroom practices including changes in their beliefs and practices over time. Findings showed that each teacher has unique views about literacy and these views influenced how they used the WELLS. Each teacher used the WELLS differently and they justified their teaching decisions based on their beliefs, expectations for students, and knowledge of literacy and students. This finding indicates that teachers did not passively follow the standards but they utilized their human capital to decide how standards can be used to better support their students. This research project supports the argument that teachers are the key to decide the effectiveness of standards. Findings also showed that teachers' collaboration with others (e.g., co-planning with colleagues,

attending workshops, participating in this research project) influenced how they think and how they teach. Teachers' human capital (e.g., beliefs, expectations, and knowledge), decisional capital, and social capital interacted with each other and influenced how teachers perceive and use the standards. Teachers refine and improve their teaching using all the three forms of capital. This research project highlights the importance to examine and support teachers' professional capital to understand how standards can be used to better support children's needs.

Third, this research project helps us conceptualize the complexity of early childhood education, especially at the congruence of teachers' literacy beliefs, classroom literacy practices, and programs structures. Teachers are the key to ensuring that standards are used to support children' learning and needs. Although a body of literature has investigated associations between teachers' beliefs and their actions, these findings remain unclear as to how teachers' beliefs influenced their teaching practices and how program factors influence teachers' use of standards. Being able to understand the effects of program factors helps to explain the complex and dynamic relationships between teachers' beliefs and practices, and their ability to access the capital they have accumulated. In addition, knowing how program features may influence teachers' implementation of standards helps us learn more about how contextual factors influence, mediate, and/or moderate teachers' use of standards.

Implications

This research project can be applied to five areas. First, given teachers' influential role in the era of standards-based education, this dissertation can be used to understand how teachers use standards in a culturally responsive way to address children's diverse

needs. Through exploring teachers' experiences with the WELLS, we learned that the same set of standards can be applied to different classroom contexts. Findings also showed that teachers used the WELLS differently to better support their students' literacy learning. Although this dissertation focuses on how teachers think and use the WELLS, children's family backgrounds, learning experience, and development appear to be factors that influence teachers' decisions about standards. It requires more studies to explore how teachers' students, and teachers' interactions with students influenced teachers' literacy beliefs and implementation of learning standards.

Second, this research project describes different patterns of teachers' literacy beliefs, classroom practices, and experiences about the standards. These findings can be used to support teachers' professional development. For example, teachers expressed that some standards or sections of the WELLS (e.g., developmental continuum) were more helpful and meaningful for their students. Findings also showed that some program factors negatively influenced teachers' use of the WELLS. Policymakers can use this information to understand teachers' needs and develop strategies to support teachers. In addition, information such as patterns of teachers' beliefs and literacy practices can be included in the workshops to help teacher educators and researchers understand the complexity of literacy practices. This also helps to support teachers to rethink different ways to implement standards based on their professional knowledge and students' needs.

Third, the surveys developed in this research project can be used to study related topics and analyze teaching practices. For example, these surveys can be used to compare different groups of early childhood educators' literacy beliefs and literacy practices across states or countries. The surveys can also be used to compare parents' and teachers'

expectations for early literacy instruction. Researchers may also use the surveys to examine how different factors such as types of early childhood program, children's ages, students' family income, and teachers' educational background are associated with teachers' perceptions and uses of the standards. Teachers and administrators may use the surveys to examine the alignment and misalignment between their beliefs and classroom instruction. They can discuss what causes the misalignment and how to support teachers' develop of their professional capital.

Fourth, this research project highlighted the importance to consider teacher's voice and experience in the discourse of standards-based movement. Every single teacher, no matter serving as lead teacher, assistant teacher, afternoon teacher, resource teacher, or substitute teacher, is influential to children's learning. It is surprising to learn that the majority of studies only explored lead teachers' beliefs and practices, and neglected other groups of teachers who are also in the same classroom and involving in teaching decisions and instruction.

In addition, one of the unique features about early childhood education is that there is more than one teacher in a classroom on a daily basis. As Anstrom (2003) reminded us, co-teachers' literacy beliefs may influence each other and their planning and instruction. Like Charlie and Debbie, Lori and her coteachers noted that their literacy beliefs and actions were influenced by their coteachers. In other words, teachers' social capital (e.g., collaboration with others) influenced their human capital (e.g., views about literacy and appropriate teaching practices), and inferred their decisional capital (e.g., decisions about how to use the WELLS). Given that the three forms of capital interact and connect with each other, this research project calls for future studies to explore the dynamic

relationships among co-teachers given that teachers' social capital (e.g., interactions with others) influence how they implement standards.

Finally, this research project reminds us to examine how program requirements and policies may influence teachers' implementation of standards. Case study teachers' experiences indicated that program factors positively and negatively affected their use of the WELLS. While it is important to understand teachers' role in making decisions about the implementation of standards, it is necessary to consider how program factors interact with teachers' professional capital and hence influence their use of standards.

Limitations

This section presents four limitations of this research project. First, this research project discussed teachers' implementation process of a set of early learning standards with a specific focus on how their beliefs were associated with their use of the standards. In this research project, I discussed the factors (including program factors, factors that influenced teachers' use of the WELLS) only mentioned by the participating teachers. More studies are needed to explore additional factors that might be associated with teachers' use of the standards and how these factors may influence teachers' implementation process.

Second, the results of this dissertation were found using the data collected from 90 survey teachers and four case study teachers. As discussed in this dissertation, program factors influenced teachers' beliefs and practices. It is likely that teachers who work at public preschools or Head Start programs exhibit different patterns of literacy beliefs and practices. These patterns may not be included in this dissertation due to all the four case study teachers worked at private non-profit preschools. In addition, given that school

districts have their unique regulations about early childhood programs, programs in each school district may exhibit unique features that are different from other school districts. Since only a portion of school districts in Wisconsin agreed to participate in the survey study, the results found in this dissertation may not reflect the diverse nature of early childhood programs.

Third, because of limited research time, I studied with each case study teacher for six months from September to March, across two academic semesters. The changes in teachers' beliefs and practices were observed within this time frame. There may be different patterns of changes found if the research period extends or shortens. In addition, when discussing the interactions between teachers' beliefs and their implementation of the WELLS, I used teachers' reported implementation in the surveys and interviews as the main data source. Although I conducted classroom observations with each case study teacher, because of limited research time, I was not able to observe all the literacy activities and WELLS related activities. Teachers' reported practices may not reflect teachers' real classroom practices.

Lastly, teachers' responses and classroom practices may be influenced by whether or not the standards-based policy is mandatory. For example, the use of the WELLS is voluntary in most teachers' cases. Because of this, some early childhood teachers in Wisconsin did not have experience applying the WELLS in their classroom and I could therefore explore teachers' beliefs and literacy practices before and after their formal encounter with the WELLS. However, this feature may have also influenced teachers' motivation and use of the standards. For example, if implementing a set of learning standards is required and mandated by a state, teachers may have stronger motivation to

try to apply the standards in their classes. However, if a state requires state-funded early childhood programs to follow the state standards, teachers may lose their decisional capital and human capital for deciding the curriculum since they may be required to strictly follow standards. They also may tend to express their declination to apply the standards since their teaching autonomy is restricted (Day, 2002; Day, Elliot, & Kington, 2005).

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Appendix A

School District Contact List

District Name	County	Number (public)	Number (private)	Web Site
Milwaukee	Milwaukee	112	80	www.milwaukee.k12.wi.us
Madison Metropolitan	Dane	30	16	www.madison.k12.wi.us
Green Bay Area Public	Brown	32	11	www.gbaps.org
Kenosha	Kenosha	28	9	www.kusd.edu
Racine Unified	Racine	22	12	www.rusd.org
Appleton Area	Outagamie	18	6	www.aasd.k12.wi.us
Sheboygan Area	Sheboygan	15	7	www.sheboygan.k12.wi.us
Oshkosh Area	Winnebago	15	5	www.oshkosh.k12.wi.us
Janesville	Rock	13	6	www.janesville.k12.wi.us
West Allis-West Milwaukee	Milwaukee	11	6	www.wawm.k12.wi.us
Waukesha	Waukesha	15		www.waukesha.k12.wi.us
Wauwatosa	Milwaukee	10	5	www.wauwatosa.k12.wi.us
Neenah Joint	Winnebago	9	6	www.neenah.k12.wi.us
West Bend	Washington	7	7	www.west-bend.k12.wi.us
Elmbrook	Waukesha	5	8	www.elmbrookschools.org
La Crosse	La Crosse	11		www.lacrosseschools.org
Stevens Point Area Public	Portage	11		www.pointschools.net
Fond du Lac	Fond du Lac	9		www.fonddulac.k12.wi.us
Beloit	Rock	8		www.sdb.k12.wi.us

Sun Prairie Area	Dane	8		www.spasd.k12.wi.us
Tomah Area	Monroe	8		www.tomah.k12.wi.us
Wisconsin Rapids	Wood	8		www.wrps.org
Watertown Unified	Jefferson		8	www.watertown.k12.wi.us
Antigo Unified	Langlade	7		www.antigo.k12.wi.us
Baraboo	Sauk	7		www.baraboo.k12.wi.us
D C Everest Area	Marathon	7		www.dce.k12.wi.us
Middleton-Cross Plains Area	Dane	7		www.mcpasd.k12.wi.us
Oak Creek-Franklin Joint	Milwaukee	7		www.ocfsd.org
Rice Lake Area	Barron	7		www.ricelake.k12.wi.us
Superior	Douglas	7		www.superior.k12.wi.us
Wausau	Marathon	7		www.wausauschools.org
Howard-Suamico	Brown	6		www.hssd.k12.wi.us
Menomonie Area	Dunn	6		sdmaonline.com
Reedsburg	Sauk	6		www.rsd.k12.wi.us
East Troy Community	Walworth		6	www.easttroy.k12.wi.us
Manitowoc	Manitowoc		6	www.manitowocpublicschools.com

Appendix B

Contact List of 4- or 5-Star Childcare Centers

Facility Name	**City**	**Capacity**
Sc Johnson Child Care Learning Ctr	Racine	480
Helwig Fam Cntr Early Chldhd Hdst	Milwaukee	390
United Community Center Day Care	Milwaukee	345
Uwm Children's Learning Center	Milwaukee	305
Ccc Of St Joseph's Hos Marsh Clinic	Marshfield	291
Kids' Safari Learning Center	Cottage Grove	276
St Joseph Academy Inc	Milwaukee	275
Child And Fam Ctrs Of Excellnc Inc	Waukesha	265
Ymca Child Learning Center	Appleton	250
Aspirus Ymca Child Development Ctr	Weston	230
Kids Express Learning Center	Madison	227
La Causa Day Care Center	Milwaukee	217
Preschool Of The Arts Inc	Madison	212
La Casa De Esperanza	Waukesha	210
Little Explorers Preschool	Madison	202
Kindercare Learning Ctr - Bellevue	Green Bay	200
Next Generation Now	Racine	199
Encompass Bellin Health Center	Green Bay	192
Roberson's Kiddie Lane Day Care	Milwaukee	191
Glendale Heights	Glendale	190
The Sycamore Tree Ccc Inc	Hartford	190
Mayo Clinic Health System Cdc	Eau Claire	186
Kindercare Learning Ctrs-Premier	Menomonee Falls	186
Dept Of Early Childcare Services	Keshena	186
Nat'l Ctrs For Lrning Excellnc Inc	Waukesha	178
Brighter Beginnings Elc- A Karrasel	Eau Claire	175
Lakeland's Little Learners	Elkhorn	171
Kindercare Learning Ctr - Cormier	Green Bay	170
La Petite Academy Oregon	Oregon	170

Little Scholars Cc And Preschool	Stevens Point	170
Ebenezer Cc Centers Inc Forest Hill	Oak Creek	166
Bright Days Learning Center	Pewaukee	166
Kindercare Learning Ctrs-S 61st St	West Allis	165
Davis Child Care Center	Oshkosh	165
Ymca Child Care North Side Center	Milwaukee	164
U W E C - Children's Nature Academy	Eau Claire	160
Kindercare Learning Ctrs-N 76th St	Milwaukee	160
Kindercare Learning Ctr - Truman	Kimberly	160
Youth Development Center	Sheboygan	160
The Learning Gardens Llc	Madison	153
Y Kids	Beaver Dam	152
Jo's Daycare Academy	Milwaukee	151
Encompass De Pere Center	De Pere	150
Encompass The Cornerstone Center	Green Bay	150
Creative Learning Preschool And Ccc	Madison	150
Woods Hollow Children's Center	Fitchburg	150
Kindercare Learning Ctrs-Whitnall	St Francis	150
Grandma's House Day Care Ctr Watert	Wauwatosa	150
Kindercare Learning Ctr - Wash Ave	Cedarburg	150
Kids Junction Square	Madison	150

Appendix C

Contact List of Childcare Centers that Did Not Participate in the YoungStar Program

Facility Name	**City**	**Capacity**
Next Door Head Start	Milwaukee	291
Kohl's Corp Child Development Ctr	Menomonee Falls	236
Kohl's Child Development Ctr 2	Menomonee Falls	233
Acelero Learning - Grand Ave	Racine	222
Lco Head Start-Early Head Start	Hayward	166
Menom Indian Head Start - D Boyd	Keshena	164
Acelero Learning - Green St	Racine	160
Once Upon A Time Child Care Center	Verona	155
Jo's Early Learning Academy	Milwaukee	151
Lakeview Recplex Preschool U	Pleasant Prairi	140
Elmbrook Church Child Enrichment Ct	Brookfield	140
Beloit Child And Family Center	Beloit	136
The Goddard School	Kenosha	132
Middleton Baby And Child Care Century Avenue	Middleton	120
The Goddard School	Brookfield	120
Milestones Prog For Child-Atwater	Shorewood	106
Angelic Care Child Care Ctr Llc	Milwaukee	100
Little Scholars Beginnings Llc	Stevens Point	100
Stepping Stones Learning Center	Neenah	100
Bright From The Start Intgl Ctr Llc	Kenosha	98
Janesville Child And Family Center	Janesville	98

Clubhouse For Kids Inc	Cross Plains	96
Clubhouse For Kids I I	Middleton	96
Tanyas Big House 4 Kidz	Verona	95
Milestones Prog For Child-Holy Fam	Whitefish Bay	93
Menom Indian Head Start - Middle Village Center	Gresham	92
Chippewa Falls CESA 11 Head Start	Chippewa Falls	90
Playhouse 4 The Precious	Fond Du Lac	90
Family Development Center	Stevens Point	90
Elm Grove Presch And Child Care Ctr	Elm Grove	90
Ev United Meth Mothers Day Out	Racine	89
Central La Crosse Head Start Center	La Crosse	86
Barrington Head Start Center	Wausau	86
Polk County Early Learning Center	Balsam Lake	85
Amy Montessori School Inc	Brookfield	85
Amy Montessori School Inc	Brookfield	85
Salvation Army Child Care Center	Manitowoc	84
Child Life Ministries	Mc Farland	80
Pilgrim Child Development Center	Wauwatosa	80
Childfirst Sparta	Sparta	80
Mothers Day Out	Elm Grove	80
Sheboygan Co Headstart-Lakeshore	Sheboygan	77
Milestones Prog For Child-St Monica	Whitefish Bay	76
Oneida Head Start	Oneida	76
Menomonie Head Start - Cesa 11	Menomonie	75
Milestones Prog For Child-Lake Bluf	Shorewood	75

Weebleworld Child Care Center Llc	Stoughton	74
The Shepherd's Kids Preschool	Green Bay	68
Jefferson Co Head Start Watertown	Watertown	68
Kings And Queens World Child Development Center	Milwaukee	64
Christ The Life Luth Preschool	Waukesha	64
Leap Academy	Waunakee	63
Steps To Success Child Dev Center	Milwaukee	62
Antigo Head Start	Antigo	60
Montessori School Of Wausau	Wausau	60
Mequon Montessori School Inc	Mequon	60
Uwo Head Start - Menasha Center	Menasha	60
Door County Ymca - Lansing Ave Center	Sturgeon Bay	59
Bad River Head Start Center	Odanah	58
Firehouse Friends Childcare Center Llc	Stanley	56
Childrens Community School	Mount Horeb	56
By Leaps And Bounds	Sauk City	56
Little Angels Early Learning Center	Oregon	55
Mequon Preschool	Mequon	54
Rice Lake Cesa 11 Head Start	Rice Lake	52
Little Lambs Academy	New Berlin	52
Westosha Head Start	Wilmot	51
Peace Nursery Center	Green Bay	50
Riverside Christian Childcare	Green Bay	50
Einstein School	Madison	50
Friendship Tree Preschool	Madison	50

Gte-Ga-Nes Preschool	Crandon	50
Little Dreamers Daycare	Potosi	50
Jefferson Co Head Start Cesa 2	Fort Atkinson	50
Caterpillar College Preschool	Pleasant Prairi	50
Congregational Preschool Inc	La Crosse	50
Mt Olive Preschool And Daycare	Weston	50
Daisy Mae Day Care	Wausau	50
Sunny Side Child Care	Milwaukee	50
Ymca Sacc At Edgewood Elementary	Greenfield	50
Ymca Sacc At Glenwood Elementary	Greenfield	50
Ymca Sacc At Maple Grove Elementary	Greenfield	50
Trini-Dad's Child Development Ctr Llc	Greenfield	50
Epiphany Childcare Academy	Wauwatosa	50
Royal Palace Child Dev Center	Milwaukee	50
Y's Kids Giese	Racine	50
Creative Arts Class Llc	Edgerton	50
Little Sprouts Learning Center	Lake Geneva	50
Inpro University	Muskego	50
All God's Children	Delafield	50

Appendix D

Questionnaire B Protocol

Early Childhood Educators' Beliefs about and Classroom Implementation of Literacy Learning Standards

Thank you for taking the time to participate in this survey. The purpose of this survey is to gain a better understanding of early childhood teachers' beliefs about early literacy learning standards and their classroom literacy practices. This survey is composed of three sections and it will take 5-10 minutes to complete. Your participation is voluntary and your responses are treated with utmost regard for your privacy and confidentiality.

Section 1: School and classroom characteristics

Please provide information about your school and classroom characteristics.

1. What type of early childhood organization do you teach?
   (1) □ Head Start
   (2) □ Childcare center
   (3) □ Private elementary school
   (4) □ Public elementary school
   (5) □ Others, please explain_____

2. How long is your class?
   (1) □ Half day

(2) □ Full day

(3) □ Other, please explain_____

3. How many years of teaching experience do you have in the field of early childhood education? _____years.

4. What age group do you currently work with?

(1) □ 3-4-year-olds

(2) □ 4-5-year-olds

(3) □ 3-5-year-olds

(4) □ Other, please explain_____

5. What is the family income level of majority of children in your class?

(1) □ Low income level

(2) □ Middle income level

(3) □ High income level

6. How many children in your class are English language learners?

(1) □ None of them are English language learners

(2) □ Less than half of them are English language learners

(3) □ Over half of them are English language learners

(4) □ Almost all of them are English language learners

Section 2: Background experiences of early learning standards

Please answer the following questions.

1. I have experience of using early learning standards in my classroom.
   (1) □ Yes
   (2) □ No

2. I have heard about Wisconsin Model Early Learning Standards (WMELS).
   (1) □ Yes
   (2) □ No

3. I consider myself to be familiar with the early literacy content of Wisconsin Model Early Learning Standards (WMELS).
   (1) □ Yes
   (2) □ No

4. I am currently using more than one set of early literacy learning standards in my classroom.
   (1) □ Yes
   (2) □ No

5. I have experience using the WMELS early literacy learning standards in my classroom.
   (1) □ Yes
   (2) □ No

Section 3: Early literacy learning standards and classroom literacy practices

This section asks how strongly you agree or disagree with 26 early learning standards, and asks how often you implement activities that are related to these standards.

Please select (circle) your level of agreement with each of the statements below, using a scale where "1" indicates that you strongly disagree with the statement and "5" indicates that you strongly agree with the statement. Please select (circle) the frequency of instruction or activities related to each standard, using a scale where "1" indicates that you have never implemented any instruction or activities that are related to the given standard and "5" indicates that you have implemented instruction or activities that are related to the given standard on almost a daily basis.

Please circle your answers based on your teaching practices in your current classroom.

STATEMENT		**COLUMN A** **LEVEL OF AGREEMENT** Strongly Disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly Agree = 5					**COLUMN B** **FREQUENCY OF RELATED INSTRUCTION OR ACTIVITIES** Never = 1 Once a month = 2 Once in two weeks = 3 Once a week = 4 Almost every day = 5				
1.	Children should do homework.	1	2	3	4	5	1	2	3	4	5
2.	Children should do worksheets.	1	2	3	4	5	1	2	3	4	5
3.	Children should recognize sounds that match and words that begin or end with the same sounds.	1	2	3	4	5	1	2	3	4	5
4.	Children should produce rhyming words in writing and speech.	1	2	3	4	5	1	2	3	4	5

STATEMENT	**AGREEMENT** Strongly Disagree=1, Disagree = 2, Neutral=3, Agree = 4, Strongly Agree=5	**FREQUENCY OF RELATED INSTRUCTION OR ACTIVITIES** Never=1, Once a month= 2, Once in two weeks= 3, Once a week = 4, Almost every day=5
5. Children should discriminate separate syllables in spoken words and begin to blend and segment syllables.	1 2 3 4 5	1 2 3 4 5
6. Children should recognize single sounds and combinations of sounds.	1 2 3 4 5	1 2 3 4 5
7. Children should use a combination of letter sounds, familiar environmental print, and picture cues to recognize a printed word.	1 2 3 4 5	1 2 3 4 5
8. Children should recognize that most speech sounds (both consonants and vowels) are represented by single letter symbols.	1 2 3 4 5	1 2 3 4 5
9. Children should recognize and name all letters of the alphabet (upper and lowercase) in familiar and unfamiliar words.	1 2 3 4 5	1 2 3 4 5
10. Children should read familiar decodable and some irregular words in books, signs, and labels.	1 2 3 4 5	1 2 3 4 5

STATEMENT	**AGREEMENT** Strongly Disagree=1, Disagree = 2, Neutral=3, Agree = 4, Strongly Agree=5					**FREQUENCY OF RELATED INSTRUCTION OR ACTIVITIES** Never=1, Once a month= 2, Once in two weeks= 3, Once a week = 4, Almost every day=5				
11. Children should look at picture books and ask questions or make comments.	1	2	3	4	5	1	2	3	4	5
12. Children should know that the book has a title, author, and illustrator.	1	2	3	4	5	1	2	3	4	5
13. Children should know how to handle books correctly and show increasing skills in print directionality.	1	2	3	4	5	1	2	3	4	5
14. Children should understand the difference between letters, words, and sentences.	1	2	3	4	5	1	2	3	4	5
15. Children should understand that books have characters, sequence of events, and story plots.	1	2	3	4	5	1	2	3	4	5
16. Children should use knowledge of sounds and letters to write some words and phrases (inventive and conventional spelling).	1	2	3	4	5	1	2	3	4	5
17. Children need plenty of drill and practice to learn the sounds of letters.	1	2	3	4	5	1	2	3	4	5
18. Children should learn many words so they can learn to read.	1	2	3	4	5	1	2	3	4	5

STATEMENT	**AGREEMENT** Strongly Disagree=1, Disagree = 2, Neutral=3, Agree = 4, Strongly Agree=5					**FREQUENCY OF RELATED INSTRUCTION OR ACTIVITIES** Never=1, Once a month= 2, Once in two weeks= 3, Once a week = 4, Almost every day=5				
19. Children should learn to write with the correct strokes.	1	2	3	4	5	1	2	3	4	5
20. When reading books to children, teachers should define new words so that children can learn them.	1	2	3	4	5	1	2	3	4	5
21. Teachers should set up a writing area in the classroom.	1	2	3	4	5	1	2	3	4	5
22. Teachers should set up a reading area in the classroom.	1	2	3	4	5	1	2	3	4	5
23. Teachers should frequently change environment prints such as signs/posters in the classroom.	1	2	3	4	5	1	2	3	4	5
24. Teachers should provide children with DVDs, VCDs, or video clips such as educational programs and cartoon.	1	2	3	4	5	1	2	3	4	5
25. Teachers should provide different types of writing products such as stories, signs, letters, and lists.	1	2	3	4	5	1	2	3	4	5
26. Teachers need to provide text with consistent spelling patterns (e.g., the fat cat sat on a hat).	1	2	3	4	5	1	2	3	4	5

Thank you for your participation! :)

Appendix E

Open-ended Questions in Questionnaire C

Thank you for taking the time to participate in this survey. The purpose of this survey is to gain a better understanding of early childhood teachers' beliefs about early literacy learning standards and their classroom literacy practices. This survey is composed of five sections and it will take 5-10 minutes to complete. Your participation is voluntary and your responses are treated with utmost regard for your privacy and confidentiality. Please do not reveal any personal, sensitive, or identifiable information when you respond to these questions (e.g., do not "name names").

Overall experiences of using the Wisconsin Early Literacy Learning Standards in your classroom

1. Please describe your experience of using the Wisconsin Early Literacy Learning Standards (WELLS) in your classroom.

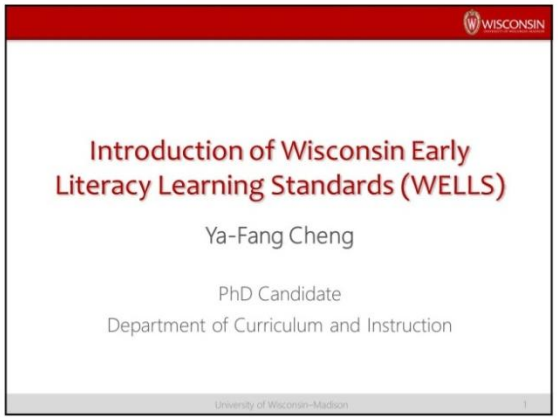
2. Which parts of the WELLS do you least like and why?

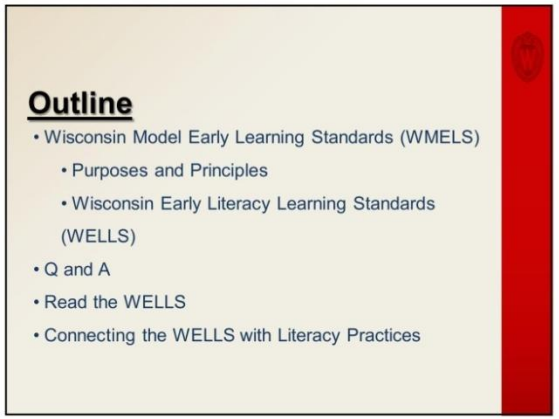
3. Which parts of the WELLS do you most like and why?

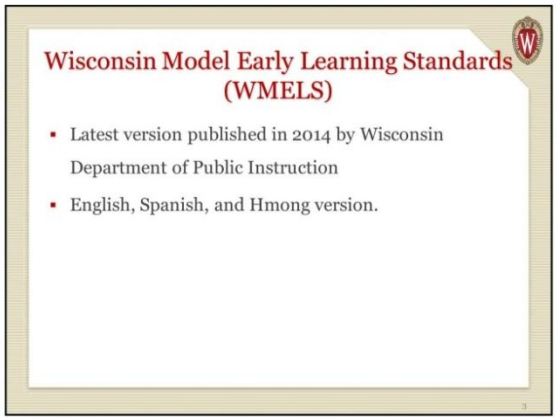
4. What are the most noticeable ways in which your use of the WELLS has modified your thinking or practice? Please explain.

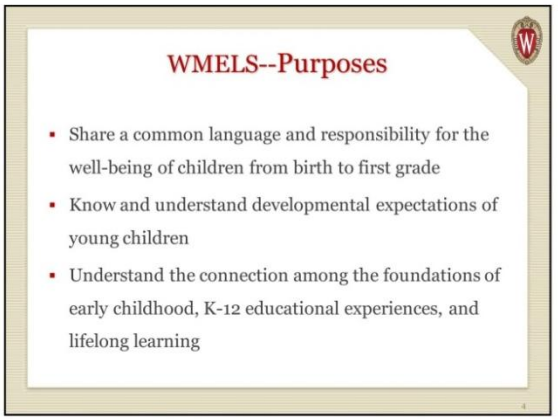
Appendix F

Slides of Introduction of the WELLS









WMELS--Primary Principles

1. All children are capable and competent.
2. Early relationships matter
3. A child's early learning and development is multidimensional.
4. Expectations for children must be guided by knowledge of child growth and development
5. Children are individuals who develop at various rates.

WMELS--Primary Principles

6. Children are members of cultural groups that share developmental patterns.
7. Children exhibit a range of skills and competencies within any domain of development.
8. Children learn through play and the active exploration of their environment.
9. Parents are children's primary and most important caregivers and educators.

WMELS--Developmental Domains

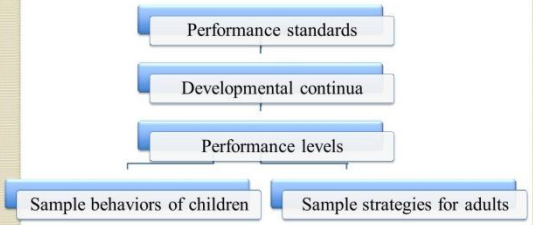
- Health and physical development
- Social and emotional development
- Language development and communication
- Approaches to learning
- Cognition and general knowledge domain

Wisconsin Early Literacy Learning Standards (WELLS)

Wisconsin early literacy learning standards (WELLS)

- Four performance standards:
  1. The child develops ability to detect, manipulate, or analyze the auditory parts of spoken language.
  2. The child understands concept that the alphabet represents the sounds of spoken language and the letters of written language.
  3. The child shows appreciation of books and understands how print works.
  4. The child uses writing to represent thoughts or ideas.

WELLS—Framework (1/4)



WELLS—Framework (2/4)

- **Performance Standard**
  - Represents the specific information, skills, or both that a child should know and be able to do. The performance standards are designed "forward" from birth to first grade and are aligned with the Common Core State Standards.
- **Developmental Continua and Performance Levels**
  - Predictable but not rigid sequence of accomplishments which describes the progressive levels of performance in the order in which they emerge in most children, based on current research.
  - The developmental continuums begin at an early developmental level and continue through developmental levels that would be typical through the completion of kindergarten (to first grade).

WELLS—Framework (3/4)

- **Sample Behaviors of Children**
  - Observable "samples" of what children might do as they demonstrate accomplishments at each level of the developmental continuum are included for each of the developmental continuums linked to each performance standard.
  - The samples are "only samples," they are not meant to be inclusive of all children's behaviors or adult strategies that are associated with the developmental continuum and performance standard.
- **Sample Strategies for Adults**
  - "Samples" of what adults might do to assist the child to gain knowledge or learn skills at each level of the developmental continuum. The adult samples are not a definitive list or an exhaustive inventory.

WELLS—Framework (4/4)

Performance standard	Performance levels	Sample behaviors of children	Sample strategies for adults	Total
One	9	28	34	71
Two	9	38	46	93
Three	10	38	41	89
Four	6	24	24	54
Total	34	128	145	307

Q & A

Read the WELLS

Connecting the WELLS with Literacy Practices

Select Which Standards You Would Like to Learn More About and Use in Your Class

- Four performance standards:
  1. The child develops ability to detect, manipulate, or analyze the auditory parts of **spoken language**.
  2. The child understands concept that the **alphabet** represents the **sounds of spoken language** and **the letters of written language.**
  3. The child shows **appreciation of books** and understands **how print works.**
  4. The child uses **writing** to represent thoughts or ideas.

Appendix G

Questionnaire A Protocol

Thank you for taking the time to participate in this survey. The purpose of this survey is to gain a better understanding of early childhood teachers' beliefs about early literacy learning standards and their classroom literacy practices. This survey is composed of five sections and it will take 15 minutes to complete. Your participation is voluntary and your responses are treated with utmost regard for your privacy and confidentiality.

Section 1: School and classroom characteristics

Please provide information about your school and classroom characteristics.

7. What type of early childhood organization do you teach?
   - (6) ☐ Head Start
   - (7) ☐ Childcare center
   - (8) ☐ Private elementary school
   - (9) ☐ Public elementary school
   - (10) ☐ Others, please explain_____
8. How long is your class?
   - (1) ☐ Half day
   - (2) ☐ Full day
   - (3) ☐ Other, please explain_____
9. How many years of teaching experience do you have in the field of early childhood education? _____years.

10. What age group do you currently work with?
    (1) ☐ 3-4-year-olds
    (2) ☐ 4-5-year-olds
    (3) ☐ 3-5-year-olds
    (4) ☐ Other, please explain_____
11. What is the family income level of majority of children in your class?
    (1) ☐ Low income level
    (2) ☐ Middle income level
    (3) ☐ High income level
12. How many children in your class are English language learners?
    (1) ☐ None of them are English language learners
    (2) ☐ Less than half of them are English language learners
    (3) ☐ Over half of them are English language learners
    (4) ☐ Almost all of them are English language learners

Section 2: Background experiences of early learning standards

Please answer the following questions.

6. I have experience of using early learning standards in my classroom.
   (1) ☐ Yes
   (2) ☐ No
7. I have heard about Wisconsin Model Early Learning Standards (WMELS).
   (1) ☐ Yes
   (2) ☐ No
8. I consider myself to be familiar with the early literacy content of Wisconsin Model Early Learning Standards (WMELS).
   (1) ☐ Yes
   (2) ☐ No
9. I am currently using more than one set of early literacy learning standards in my classroom.
   (1) ☐ Yes
   (2) ☐ No
10. I have experience using the WMELS early literacy learning standards in my classroom.
    (1) ☐ Yes
    (2) ☐ No

Section 3: Beliefs about early literacy

Please select (circle) your level of agreement with each of the statements below, using a scale where "1" indicates that you strongly disagree with the statement and "5" indicates that you strongly agree with the statement.

		LEVEL OF AGREEMENT Strongly Disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly Agree = 5				
As an early childhood teacher of 3-5 year-old children, I believe that:						
1.	Early literacy plays an important role in early childhood education.	1	2	3	4	5
2.	Early literacy deserves more attention than other learning domains.	1	2	3	4	5
3.	It is important to provide more early literacy related activities than other types of activities in the classroom.	1	2	3	4	5
4.	Teachers should closely follow textbook activities and publisher-provided lesson plans.	1	2	3	4	5
5.	Teachers should try to make their lessons as interesting as possible for the children.	1	2	3	4	5
6.	For fluent reading, rapid identification of whole words is necessary.	1	2	3	4	5
7.	Materials for teachers' read aloud should only use high-frequency words.	1	2	3	4	5
8.	When learning to read, learning to use context clues (syntax and semantics) is more important than learning to use grapho-phonic cues (letters and sounds).	1	2	3	4	5

		LEVEL OF AGREEMENT Strongly Disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly Agree = 5				
As an early childhood teacher of 3-5 year-old children, I believe that:						
9.	A teacher should be concerned when readers' miscues change the meaning of texts.	1	2	3	4	5
10.	Children's ability to recognize letters is a strong predictor of early reading success.	1	2	3	4	5
11.	Children's ability to rhyme words is a strong predictor of early reading success.	1	2	3	4	5
12.	Children need many experiences to learn new vocabulary, such as going to the zoo and talking about it.	1	2	3	4	5
13.	When early readers do not know how to pronounce a word, the most beneficial strategy to suggest is to use the context.	1	2	3	4	5
14.	Children need to learn to sit still and learn to focus.	1	2	3	4	5
15.	Children learn to read before learning to write.	1	2	3	4	5
16.	Children learn to write by watching teachers write.	1	2	3	4	5
17.	Children learn better when they team up – for example, having groups of 2-3 children work together to complete a project.	1	2	3	4	5
18.	Children should not waste time scribbling and drawing when they can be learning to write.	1	2	3	4	5
19.	Children should write without worrying about spelling.	1	2	3	4	5

Section 4: Beliefs about early literacy learning standards

Please select (circle) your level of agreement with each of the statements below, using a scale where "1" indicates that you strongly disagree with the statement and "5" indicates that you strongly agree with the statement.

		LEVEL OF AGREEMENT Strongly Disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly Agree = 5				
As an early childhood teacher of 3-5 year-old children, I believe that:						
1.	Early literacy learning standards can be used to improve children's school readiness.	1	2	3	4	5
2.	Early literacy learning standards provide a framework for teachers to know and understand developmental expectations of young children.	1	2	3	4	5
3.	Early literacy learning standards provide a framework for teachers to understand the connection of early childhood with K-12 educational experiences and lifelong learning.	1	2	3	4	5
4.	Early literacy learning standards provide a framework for families, professionals, and policymakers to share a common language and responsibility for the well-being of children from birth to first grade.	1	2	3	4	5
5.	Early literacy learning standards can be a guide for planning experiences and instruction.	1	2	3	4	5
6.	Early literacy learning standards can be a guide for selecting assessment tools appropriate for children from a variety of backgrounds with differing abilities.	1	2	3	4	5
7.	Early literacy learning standards restrict teachers' instructional autonomy.	1	2	3	4	5

Section 5: Early literacy learning standards and classroom literacy practices

This section asks how strongly you agree or disagree with 26 early learning standards, and asks how often you implement activities that are related to these standards. Please select (circle) your level of agreement with each of the statements below, using a scale where "1" indicates that you strongly disagree with the statement and "5" indicates that you strongly agree with the statement. Please select (circle) the frequency of instruction related to each standard, using a scale where "1" indicates that you have never implemented any activities that are related to the given standard and "5" indicates that you have implemented activities that are related to the given standard on almost a daily basis.

STATEMENT	**COLUMN A** **LEVEL OF AGREEMENT** Strongly Disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly Agree = 5					**COLUMN B** **FREQUENCY OF RELATED INSTRUCTION** Never = 1 Once a month = 2 Once in two weeks = 3 Once a week = 4 Almost every day = 5				
1. Children should do homework.	1	2	3	4	5	1	2	3	4	5
2. Children should do worksheets.	1	2	3	4	5	1	2	3	4	5
3. Children should recognize sounds that match and words that begin or end with the same sounds.	1	2	3	4	5	1	2	3	4	5
4. Children should produce rhyming words in writing and speech.	1	2	3	4	5	1	2	3	4	5
5. Children should discriminate separate syllables in spoken words and begin to blend and segment syllables.	1	2	3	4	5	1	2	3	4	5

		AGREEMENT Strongly Disagree=1, Neutral=3, Strongly Agree=5					**FREQUENCY OF RELATED INSTRUCTION** Never=1, Almost every day=5				
6.	Children should recognize single sounds and combinations of sounds.	1	2	3	4	5	1	2	3	4	5
7.	Children should use a combination of letter sounds, familiar environmental print, and picture cues to recognize a printed word.	1	2	3	4	5	1	2	3	4	5
8.	Children should recognize that most speech sounds (both consonants and vowels) are represented by single letter symbols.	1	2	3	4	5	1	2	3	4	5
9.	Children should recognize and name all letters of the alphabet (upper and lowercase) in familiar and unfamiliar words.	1	2	3	4	5	1	2	3	4	5
10.	Children should read familiar decodable and some irregular words in books, signs, and labels.	1	2	3	4	5	1	2	3	4	5
11.	Children should look at picture books and ask questions or make comments.	1	2	3	4	5	1	2	3	4	5
12.	Children should know that the book has a title, author, and illustrator.	1	2	3	4	5	1	2	3	4	5
13.	Children should know how to handle books correctly and show increasing skills in print directionality.	1	2	3	4	5	1	2	3	4	5

		AGREEMENT Strongly Disagree=1, Neutral=3, Strongly Agree =5					**FREQUENCY OF RELATED INSTRUCTION** Never=1, Almost every day=5				
14.	Children should understand the difference between letters, words, and sentences.	1	2	3	4	5	1	2	3	4	5
15.	Children should understand that books have characters, sequence of events, and story plots.	1	2	3	4	5	1	2	3	4	5
16.	Children should use knowledge of sounds and letters to write some words and phrases (inventive and conventional spelling).	1	2	3	4	5	1	2	3	4	5
17.	Children need plenty of drill and practice to learn the sounds of letters.	1	2	3	4	5	1	2	3	4	5
18.	Children should learn many words so they can learn to read.	1	2	3	4	5	1	2	3	4	5
19.	Children should learn to write with the correct strokes.	1	2	3	4	5	1	2	3	4	5
20.	When reading books to children, teachers should define new words so that children can learn them.	1	2	3	4	5	1	2	3	4	5
21.	Teachers should set up a writing area in the classroom.	1	2	3	4	5	1	2	3	4	5
22.	Teachers should set up a reading area in the classroom.	1	2	3	4	5	1	2	3	4	5
23.	Teachers should frequently change environment prints such as signs/posters in the classroom.	1	2	3	4	5	1	2	3	4	5
24.	Teachers should provide children with DVDs, VCDs, or video clips such as educational programs and cartoon.	1	2	3	4	5	1	2	3	4	5

		AGREEMENT Strongly Disagree=1, Neutral=3, Strongly Agree =5					**FREQUENCY OF RELATED INSTRUCTION** Never=1, Almost every day=5				
25.	Teachers should provide different types of writing products such as stories, signs, letters, and lists.	1	2	3	4	5	1	2	3	4	5
26.	Teachers need to provide text with consistent spelling patterns (e.g., the fat cat sat on a hat).	1	2	3	4	5	1	2	3	4	5

Appendix H

Classroom Observation Record

Site:_____ Date:_____ Time:_____ Teachers:_____

<table>
<tr><td>Activity</td><td colspan="6">Observations</td></tr>
<tr><td rowspan="2"></td><td>Time</td><td></td><td>Location e.g., writing center</td><td></td><td>Photos</td><td></td></tr>
<tr><td colspan="6">Learning materials:

Child’s responses:

Field notes:</td></tr>
<tr><td rowspan="2"></td><td>Time</td><td></td><td>Location e.g., writing center</td><td></td><td>Photos</td><td></td></tr>
<tr><td colspan="6">Learning materials:

Child’s responses:

Field notes:</td></tr>
</table>

Appendix I

Teacher Interview Protocol Questions

First Teacher Interview

Section 1: Expectations for child's early literacy learning

1. Can you tell me about your philosophy of early childhood education? How do you think about the role of early literacy in early childhood education?
2. How do you define early literacy? What are your expectations about children's literacy abilities at this age?
3. What do you see as the challenges in teaching early literacy to young children? How did you overcome these barriers?

Section 2: Classroom literacy practices

1. When do you teach literacy activities?
2. What activities are you currently using to promote early literacy? What is the frequency and length of each activity? Why do you think these activities are important?
3. How do you encourage early literacy in your classroom?
4. How have you organized your classroom to promote early literacy?
5. What learning materials such as books and writing tools do you use and/or provide to improve children's literacy learning? How do you use these learning materials?
6. Is there anything else you would like to share with the researcher about your literacy practices?

Section 3: Perceptions of early literacy learning standards and the Wisconsin Early Literacy Learning Standards

1. Researchers assert that early literacy learning standards can promote children's early literacy skills and knowledge. What is your view on this statement?
2. What effects (if any) do you expect early literacy standards to have?
3. How do you understand the Wisconsin Early Literacy Learning Standards?
4. Do you have any concerns about the Wisconsin Early Literacy Learning Standards?

Second Teacher Interview

Section 1: Questions gathered from classroom observations and other sources.

I will ask questions gathered from my classroom observations, photos, and artifacts.

Section 2: Questions about responses in Questionnaire A

I will ask teachers' response in each question.

1. Tell me about the reasons you chose this particular response for this given question.

Section 3: Questions about revising Questionnaire A

1. Do you have any suggestions for revising the questionnaire such as the structure, the format, wording, or the number of questions?

More questions may be developed after collecting and analyzing responses in Questionnaire A.

Introduction to the Wisconsin Early Literacy Learning Standards

We will talk about your beliefs about the Wisconsin Early Literacy Learning Standards. Three things to prepare for the meeting:

1. Read the official manual of WMELS, especially the sections of introduction, design, goals (pg.1 to 10), and literacy standards (pg. 43, 54-64).

2. Choose one or a few standards of the four early literacy standards (i.e., pg. 43) that you feel interested in and plan to use in your classroom.

3. Think about the following questions:
    A. Researchers assert that early literacy learning standards can promote children's early literacy skills and knowledge. What is your view on this statement?
    B. How do you currently understand the Wisconsin Early Literacy Learning Standards?
    C. What effects (if any) do you expect the WELLS to have on your literacy practices?
    D. Do you have any concerns about the Wisconsin Early Literacy Learning Standards?
    E. How are your previous and current classroom literacy practices associated with the concepts and priorities reflected in the Wisconsin Early Literacy Learning Standards (WELLS)? What WELLS indicators have been applied in the classroom? What WELLS indicators have not? Why?

Third Teacher Interview

Section 1: Questions gathered from classroom observations and other sources.

I will ask questions gathered from my classroom observations, photos, and artifacts.

Section 2: Beliefs about Early Literacy Learning Standards

After being formally introduced to the WELLS, please answer the following questions.

1. Researchers assert that early literacy learning standards can promote children's early literacy skills and knowledge. What is your view on this statement?

Section 3: Beliefs about the Wisconsin Early Literacy Learning Standards

1. How do you currently understand the Wisconsin Early Literacy Learning Standards?

2. What effects (if any) do you expect the WELLS to have on your literacy practices?
3. Do you have any concerns about the Wisconsin Early Literacy Learning Standards?

Section 4: Wisconsin Early Literacy Learning Standards and classroom practices

1. How are your previous and current classroom literacy practices associated with the concepts and priorities reflected in the Wisconsin Early Literacy Learning Standards (WELLS)? What WELLS indicators have been applied in the classroom? What WELLS indicators have not? Why?
2. Which Wisconsin Early Literacy Learning Standards do you feel interested in and plan to use in your classroom? Why?

Fourth and Fifth Teacher Interviews

Section 1: Questions gathered from classroom observations and other sources.

I will ask questions gathered from my classroom observations, photos, and teacher artifacts.

Section 2: Wisconsin Early Literacy Learning Standards and classroom literacy practices

Please recall what literacy practices you have done in the past months and answer the following questions.

1. How did you use the Wisconsin Early Literacy Learning Standards in your classroom? For example, what indicators did you adopt? Why?
2. What new literacy activities/learning materials/classroom environment did you provide in the past weeks?
3. How do you know that your children have met the requirements of the WELLS?
4. How did the WELLS influence your literacy practices in the following aspects:
    - Curriculum design
    - Teaching methods/pedagogies

- Classroom environmental arrangements
- Learning material arrangements
- Child assessment

5. Did you have any concerns when using the WELLS in your classroom?
6. What challenges (if any) did you have when using the WELLS in your classroom?
7. What accommodations did you make?

The Last Teacher Interview

Section 1: Responses to Questionnaire B

Questions will be developed during case-study research.

Section 2: Questions gathered from classroom observations and other sources.

I will ask questions gathered from my classroom observations, photos, and teacher artifacts.

Section 3: Perceptions and interpretations of the Wisconsin Early Literacy Learning Standards

1. What is your current understanding of the WELLS?

Section 4: The use of the Wisconsin Early Literacy Learning Standards and classroom literacy practices

Please recall your experiences of using the WELLS in the past 18 weeks and answer the following questions.

1. What is your current definition of early literacy?
2. What are your current expectations of children's literacy learning?
3. Which parts of the WELLS do you least like and why?
4. Which parts of the WELLS do you most like and why?
5. What is the most noticeable ways in which your use of the WELLS has modified

your thinking or practice? Please explain.

6. How does the WELLS influence your literacy practices in the following aspects:
   - Curriculum design
   - Teaching methods/pedagogies
   - Classroom environmental arrangements
   - Learning material arrangements
   - Child assessment
7. Do you have any concerns when using the WELLS in your classroom?
8. Please describe your experience of using the Wisconsin Early Literacy Learning Standards (WELLS) in your classroom.

Appendix J

The Research Questions Matched with Corresponding Interview Questions

Table Appendix J

Research Questions Matched with Corresponding Interview Questions

Research Question	Before being formally introduced to the WELLS	After being formally introduced to the WELLS
One	● Beliefs about children's literacy learning 1. Can you tell me about your philosophy of early childhood education? How do you think about the role of early literacy in early childhood education? (Teacher Interview 1) 2. How do you define early literacy? What are your expectations about children' literacy abilities at this age? (Teacher Interview 1) 3. What do you see as the challenges in teaching early literacy to young children? How did you overcome the barriers? (Teacher Interview 1) 4. Questions about responses in Questionnaire A.(Teacher Interview 2)	

Table Appendix J (continued)

Research Questions Matched with Corresponding Interview Questions (continued)

Research Question	Before being formally introduced to the WELLS	After being formally introduced to the WELLS
Two	● Beliefs about early learning standards 1. Researchers assert that early literacy learning standards can promote children's early literacy skills and knowledge. How do you think about the statement? (Teacher Interview 1) 2. What effects (if any) do you expect early literacy standards to have? (Teacher Interview 1) 3. What is your understanding of the Wisconsin Early Literacy Learning Standards? (Teacher Interview 1) 4. Do you have concerns (if any) do you have about the Wisconsin Early Literacy Learning Standards? (Teacher Interview 1) 5. Questions about responses in Questionnaire A.(Teacher Interview 2)	● Beliefs about early learning standards 1. Researchers assert that early literacy learning standards can promote children's early literacy skills and knowledge. How do you think about the statement? (Teacher Interview 3) 2. What is your understanding of the Wisconsin Early Literacy Learning Standards? (Teacher Interview 3) 3. What effects (if any) do you expect the WELLS to have on your literacy practices? (Teacher Interview 3) 4. Do you have concerns about the Wisconsin Early Literacy Learning Standards (if any)? (Teacher Interview 3) 5. How your previous and current classroom literacy practices are associated with the concepts and priorities reflected in the Wisconsin Early Literacy Learning Standards (WELLS)? What WELLS indicators have been applied in the classroom? What WELLS indicators have not? Why? (Teacher Interview 3) 6. Which Wisconsin Early Literacy Learning Standards do you feel interested and plan to use it in your classroom? Why? (Teacher Interview 3)

Table Appendix J (continued)

Research Questions Matched with Corresponding Interview Questions

Research Question	Before being formally introduced to the WELLS	After being formally introduced to the WELLS
Two	● Classroom literacy practices 1. When do you teach literacy activities? (Teacher Interview 1) 2. What activities are you currently using to promote early literacy? What is the frequency and length of each activity? Why do you think those activities are important? (Teacher Interview 1) 3. How do you encourage early literacy in your classroom? (Teacher Interview 1) 4. Tell me about how you have your classroom organized to promote early literacy? (Teacher Interview 1) 5. What learning materials such as books and writing tools do you use and/or provide to improve children's literacy learning? How do you use these learning materials? (Teacher Interview 1)	● Classroom literacy practices 1. How did you use the Wisconsin Early Literacy Learning Standards in your classroom? For example, what indicators did you adopt? Why? (Teacher Interview 4 and 5) 2. What new literacy activities/learning materials/classroom environment did you provide in the past weeks? (Teacher Interview 4 and 5) 3. How do you know that your child have met requirements of the WELLS? (Teacher Interview 4 and 5) 4. How did the WELLS influence your literacy practices in the following aspects(Teacher Interview 4, 5, and 6): ● Curriculum design ● Teaching methods/pedagogies ● Classroom environmental arrangements ● Learning material arrangements

Table Appendix J (continued)

Research Questions Matched with Corresponding Interview Questions

Research Question	Before being formally introduced to the WELLS	After being formally introduced to the WELLS
Two	6. Is there anything else you would like to share with the researcher about your literacy practices? (Teacher Interview 1) 7. Questions about responses in Questionnaire A.(Teacher Interview 2)	5. What accommodations had you made? (Teacher Interview 4 and 5) 6. Did you have any concerns when using the WELLS in your classroom?(Teacher Interview 4, 5, and 6) 7. What challenges did you have when using the WELLS in your classroom?(Teacher Interview 4, 5, and 6)
Three	● Teachers' beliefs about early literacy Please recall your experiences of considering using the WELLS in the past 18 weeks and answer the following questions. 1. What is your current definition of early literacy? (Teacher Interview 6) 2. What are your current expectations of children's literacy learning? (Teacher Interview 6) ● Teachers' beliefs about the WELLS 1. Which parts of the WELLS do you least like and why? (Teacher Interview 6) 2. Which parts of the WELLS do you most like and why? (Teacher Interview 6) 3. What is the most noticeable ways in which your use of the WELLS has modified your thinking or practice? (Teacher Interview 6)	

Appendix K
Code Lists for Structural Coding

Table Appendix K

Code Lists for Structural Coding

	Whole name	Codes
RQ 1	previously reported beliefs about/expectations about children's literacy	Pre-thought lit
	Previous literacy activities in classroom	Pre lit activity
	Previous literacy environments	Pre lit envir
RQ 2	Beliefs after the intro of the WELLS	Aft thought lit
	Literacy activities happened after the intro of the WELLS	Aft lit activity
	Literacy environments after the intro of the WELLS	Aft (lit) envir
	Purpose/function of WMELS	Aft purpose of WMELS
RQ 3	Positive experience/attitude	Before- Positv Ex-attd
		Process- Positv Ex-attd
		overview- Positv Ex-attd
	Negative experience	Before- Negtv Ex-attd
		Process- Negtv Ex-attd
		overview- Negtv Ex-attd
	Suggestions	Before- Suggest
		Process- Suggest
		overview- Suggest
	Change practices because of WMELS	Change bc WMELS
Across RQ	Human capital--Content knowledge of literacy, how to teach/priority	HC-content lit knowledge