The Multimodal Power of Storytime: Exploring an Information Environment for Young Children

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Abstract

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During the first five years of life children are undergoing significant amounts of learning and development that provides the foundation for later school and lifelong learning (Gopnik, Meltzoff, & Kuhl, 2001). Exposing young children to information-rich environments during this crucial time can help to support their learning (Dresang, 2013). Informal learning environments often endeavor to support learning for young children during this period, but a clear understanding of the learning opportunities provided by these environments has not yet emerged. Exploring the information aspects of the environments, or the "information environments," in which young children exist can provide insight into the learning opportunities provided for children by these environments.

Eisenberg and Small's (1993) framework for information-based education was used to explore public library storytimes as an information environment for young children. The three dimensions of the framework were used to guide the exploration, which examined the nature of the information resources and the information content, the information processes occurring during storytime and the roles of the individuals attending storytime. This exploration included two phases. The first phase consisted of secondary data analysis where observations were done

of video-recorded storytimes that were taken during a previous study. The second phase included a survey of storytime providers in Washington State. In addition, the SEALE tool--a coding tool based on the Head Start Early Learning Outcomes Framework (Office of Head Start, 2015), was used to reveal children's behaviors exhibited during the observations of the video-recorded storytimes and to provide insight into the learning behaviors that occur for children while interacting in this information environment.

The findings reveal that storytime providers are incorporating a wide variety of information content and information resources; and communicating the information to the children through multiple methods while also providing children with multiple ways through which they can interact with the information content and resources. In addition, each type of attendee is playing a variety of roles, all of which contribute to the enactment of the information environment in storytime. Finally, through the SEALE tool, the research revealed that children are exhibiting learning behaviors across a variety of domains for learning and child development. Building on these findings, a model is presented that portrays how storytime participants interact with each other and with information to support and contribute to the enactment of the information environment of storytime. Overall, this research demonstrates that storytimes are providing a rich information environment for young children that encourages and supports their learning in a variety of ways.

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Chapter 1: Introduction

1.1 Information and Learning

Information is a crucial part of today's world and although a great deal of research exists studying the use of information by adults, teens, and school-age children, young children are rarely studied. This might be based on an assumption that young children don't use information. While they don't use information in the same ways that adults and teens might, a few scholars have touched on young children's use of information. According to Dresang (2013), much of a young child's learning occurs from information that they have received from others. Bruner (1961, 1964), in his writings about children's learning, refers to the child as an information processor and describes learning as the process of internally organizing information for future use.

While both Dresang and Bruner allude to the relationship between information and learning, they do not attempt to describe it in detail. Grabowski and Small (1991) go a bit further and describe the relationship between information, learning, and instruction as information existing as a requirement for learning and instruction. However, they also note that "information is not always instructional nor does merely having access to information always result in learning" (p. 157).

Neuman (2011) takes a deeper look at the role of information in learning by examining theories and definitions from multiple disciplines and theorizes that the basic building block of learning is information. According to Neuman, "Learning and information are two sides of the same coin that complement each other in unique ways" (2011, p. 14). She describes information as specific elements connected by processes and relationships that are influenced by a variety of contextual

factors. Learning is described as the process and the outcome of constructing personal meaning from the elements that form information. She concludes, first, that information is the basis for learning, second, that the two are inseparable, and finally, that in today's information-rich environments, information and learning converge as individuals work to understand their world (Neuman, 2011).

If we agree that information is the basic building block for learning, then when examining the learning of young children, it is important to consider the relationship between 1) information, learning and knowledge and 2) learning and development. The relationship between information, learning, and knowledge can be described as follows: information is an external construct and through the process of learning, it is transformed into knowledge as an internal construct, which has been expanded, altered or organized into existing or new cognitive structures (Neuman, 2011; Meadow & Yuan, 1997). The relationship between a child's learning and development can be described as: learning exists as a catalyst for development. The learning process always precedes the developmental process. Learning that is appropriately organized helps to promote an assortment of developmental processes that would otherwise not be possible without the learning process (Vygotskiĭ & Cole, 1978). Therefore, for children, information, learning, and development are intrinsically linked with information serving as the base for learning and development.

Many theorists have acknowledged the importance of children's environments for their learning. Vygotsky was one of the first early learning theorists to incorporate the role of the environment on children's learning and development. He felt that learning was not an individual process but

an effect of the social and cultural influences represented in the individual. He focused on children as members of their culture and society and how they learn from those influences. In his view, learning occurred when children internalized information that was shared with them in social interactions with others (Tudge & Winterhoff, 1993).

In the Ecological Model of Human Development, Bronfenbrenner (1993) theorized that human development occurs through interactions between the individuals and their environments and identified multiple levels of environments that can influence an individual's development. In an earlier work, Bronfenbrenner used a formula to explain development. The formula, based on a formula developed by Lewin to explain behavior, is D = f(PE), which essentially states that "development is a joint function between person and environment" (Bronfenbrenner, 1979, p. 25). Although this formula places the emphasis on individual development, Bronfenbrenner (1979) also states that parents, caregivers, and teachers maintain power and influence over a child's developmental progress due to their ability to construct a child's experiences. Furthermore, while Bronfenbrenner's theory focuses on a child's development, it is also important to apply it to a child's learning because of the close relationship between learning and development. The impact that a child's environments have on a child's development is similar to the impact that the environments have on a child's learning. Therefore, I modified the formula above to L = f(PE), which posits that learning is also a joint function between children and their environments. If children's environments and information are critical for their learning, it follows that children need to interact with a variety of information in their environments in order to learn and develop.

However, because young children typically lack the capability to acquire and understand information on their own (Walter, 1994), providing information-filled environments is not enough to adequately support a child's learning (Neuman and Celano, 2012). Environments for learning also need to provide additional information supports, including engaged adults who can communicate and share information through various information processes in order for children to learn the important knowledge, skills, and behaviors necessary for healthy development (Neuman and Celano, 2012). Eisenberg and Small (1993) conceptualize the information environment for learning as an "information base". In their model, educational situations are composed of series of learning events. They consider a learning event to be something like a specific class or lesson and recognize "the information base as a central and essential element of the learning event" (Eisenberg & Small, 1993, p. 265). The components of an information base are identified as information attributes, analogous to the information supports noted above, e.g., information processes, information resources and engaged adults (Eisenberg & Small, 1993). Exposing children to information environments that contain a wide variety of information resources, information processes, and engaged adults can help to prepare children to be successful with learning throughout their lives, whether it is learning within formal education, learning within informal learning environments, or independent self-directed learning.

1.2 Learning for School

As young children grow and develop through their preschool years, they have a variety of educational experiences in formal learning environments including daycare and preschool, and informal learning environments such as libraries, museums, and zoos. For most children, formal education is their first experience with an intensive educational environment. Because brain research has shown that a substantial amount of learning occurs during the first five years of life

(Gopnik, Meltzoff, & Kuhl, 2001), these years are a crucial time for children to learn the information, behaviors, and skills that they need for learning in a formal education setting. Some parents/caregivers are able to provide the resources and information needed to support their young child's learning, but many are not. In addition, daycare or pre-school may not be available (and is not required) for many children prior to age five. According to the 2011 Survey of Income and Program Participation, only 23.5% of children ages 0-5 attended an organized care facility (i.e. daycare center, preschool, or Head Start center). Those children not in an organized care facility were cared for by relatives, non-relatives, or in a family day care (Laughlin, 2013). Because of this diversity in care, young children receive wildly varying levels of support for learning during this period. This can contribute to the "knowledge gap" described by Neuman and Celano (2012) where a disparity between the information supports (i.e. information resources, engaged adults, information processes) provided to children in different socioeconomic levels contributes to varying levels of school readiness and ultimately educational achievement.

The term school readiness refers to children having the necessary skills and behaviors to be successful in an academic environment (Cross & Conn-Powers, 2011). Entering school with the necessary skills and behaviors to be successful in a formal education setting is critical to a child's long-term educational success. However, in the United States, 52% of low-income children and 25% of middle and higher income children enter school lacking the skills necessary to learn and be successful within a formal education setting (Isaacs, 2012). Research has found that children who start school behind their peers typically stay behind (Fiester, 2010; Flanagan, West and Walston, 2004).

Researchers, by examining longitudinal academic achievement, have discovered that many minority and lower-income children begin school with knowledge and skills that are already behind those of their white, middle to higher income peers (Layzer & Price, 2008). Furthermore, for years educators have noticed what they refer to as the achievement gap, which is a gap between the academic achievement of minority groups and lower-income children and white, middle to higher income children (Williams, 2011). These observations have led researchers and educators to believe that school readiness gaps turn into achievement gaps, as kids get older. Both gaps, achievement and school readiness, have brought a focus on school readiness as one method for closing both the school readiness gap and in turn, the achievement gap (Cross & Conn-Powers, 2011).

Researchers have yet to agree on which knowledge, skills, and behaviors, and what combination of these, constitutes being "ready for school." They are in agreement, though, that school readiness requires a multi-faceted approach. In 1997, the National Education Goals Panel identified five broad domains crucial for school readiness:

- physical well-being and motor development,
- social and emotional development,
- approaches to learning,
- language development, and
- cognition and general knowledge (Child Trends, 2001).

Recently, researchers have begun to take a closer look at the specific knowledge, skills, and behaviors that contribute to success in an academic environment. In reviewing the latest research

on school readiness predictors, Cross and Conn-Powers (2011) identified school-entry math skills, attention skills, school-entry language and reading skills, and fine motor skills as strong predictors. Physical and mental health and well-being were identified as related to school readiness but not necessarily predictors of school readiness. Social and emotional behavior was recognized as an uncertain predictor because of conflicting research findings. Both of these reports indicate that to prepare young children to be successful in an academic environment they need to be exposed to information-rich environments that incorporate a wide variety of information resources, and processes that cover multiple domains of child development and learning.

1.3 Learning for Life

Children spend a large amount of their childhood and adolescence in a school or academic environment. Arguably, the academic experience sets the stage for lifelong learning (Norman, 2012). Lifelong learning is described as a "life-long," "life-wide," and "life-deep" process (Institute for Museum and Library Services, 2009). Norman (2012) describes lifelong learning as a process that is directed, motivated, and driven by the interests and experiences of the learner. The self-directed, self-motivated, interest-driven qualities of lifelong learning are closely aligned with the characteristics of learning that occurs within informal learning environments. A benefit of both learning in informal environments and lifelong learning is that it can account for the individual needs of learners as well as their cultural and economic backgrounds (Institute for Museum and Library Services, 2009). Learning in informal environments and lifelong learning are also strongly linked in that informal learning environments prepare individuals for lifelong learning (Diamond, Luke, & Uttal, 2009; Horrigan, 2016; Norman, 2012).

Many informal learning environments, such as libraries, museums, zoos, and community centers, are well situated to provide early learning programs and resources that can help support school readiness and lifelong learning by providing access to rich information environments. However, due to costs, locations, and other factors, many families may not be able to take advantage of the resources and programs offered by all of these informal learning environments. Public libraries, though, are uniquely positioned to meet the early learning needs of all children regardless of socioeconomic status because they offer a wide range of free programs and resources directed at young children and are located in most communities across the nation (Howard, 2013; Becker, 2011; Celano & Neuman, 2001; Herb, 2001).

1.4 Storytimes

Storytimes serve as the foundation of free programs offered by the public library for young children. Storytimes are offered in most public libraries across the nation and are widely thought of as fun and educational experiences that encourage early literacy for young children (Ghoting & Martin-Díaz, 2013; Campana et al, 2016). Storytimes have historically been provided as fun, enjoyable activities that help encourage a love of books and reading. In recent years, the early literacy benefits of storytimes for the children involved have been recognized and corroborated through research (Mills et al., 2018; Campana et al., 2016; Becker, 2012; McKechnie, 2006).

Building on the early literacy benefits of storytimes, many storytime providers have begun to view storytimes as a vehicle for encouraging many other types of learning and skills that are crucial for school readiness and lifelong learning (Diamant-Cohen, 2007; Celano and Neuman, 2015; Williams, 1998). In Project VIEWS2, a study examining the early literacy impact of storytimes, storytime providers reported working to encourage a range of learning domains and

skills, including early literacy, STEM learning, social skills, self-regulation skills, and gross and fine motor skills, among others (VIEWS2 unpublished data). However, storytimes have not been widely recognized for encouraging types of learning outside of literacy.

Storytime providers work to encourage these various learning domains and skills, in part by incorporating a wide variety of activities in their storytimes, such as talking, singing, reading, play, art, and movement (VIEWS2 unpublished data). These activities can be crucial to young children's learning because they serve as information processes or ways for the storytime provider to communicate and share information while interacting with children around the information being shared. Young children typically lack the capability to find and understand needed information or even articulate many of their information needs (Walter, 1994), so these information processes offered in storytimes serve as a means for the librarian and parents/caregivers to communicate, shape, and scaffold information that is necessary for the young child's learning.

A variety of activities are typically incorporated in storytimes to encourage learning because children are more likely to internalize and learn information that they have encountered across multiple contexts (Bransford, Brown, & Cocking, 2000). The range of activities incorporated in storytimes can be examined through the lens of multimodality (Stooke and McKenzie, 2009; Kress and van Leeuwen, 2001) to provide a deeper understanding of how storytime providers communicate and share information with the children and adults attending their storytimes. Within the theory of multimodality, the ways that storytime providers communicate and share information would be characterized as modes, or "sets of semiotic resources for meaning

making" (Jewitt, 2008, p. 246). Flewitt (2013) identifies talk, gaze, gesture, drawing, dance, and music as examples of modes that young children interact with throughout their day. The range of modes incorporated in storytimes is important because it helps to support the acquisition of language and other literacies (Stooke and McKenzie, 2009).

Even though storytime providers design storytimes to incorporate a variety of activities and information to encourage a wide range of learning domains and skills, research on the activities, content, and impact of these programs has been limited. Studies do appear to establish storytimes as a fertile environment for learning. For example, Project VIEWS2 found a strong correlation between the early literacy content included in the storytime and children's early literacy behaviors at storytime. This demonstrates that the children attending storytimes appear to be responding to what storytime providers incorporate in storytimes (Campana et al, 2016). Williams (1998) found that storytime providers view storytimes as learning experiences and incorporate emergent literacy experiences in their programs. Other research has found that storytimes appear to promote a variety of early learning opportunities and skills (Becker, 2012; McKenzie and Stooke, 2007; McKechnie, 2006; Smardo, 1983).

While these studies have helped to establish storytimes as valuable learning environments, there is still a lack of research that examines the nature of the information content, resources, and processes provided in storytimes and how these information aspects are used to create an information environment that provides a holistic learning experience for young children. The intent of this dissertation was to address this lack of research by providing a deeper

understanding of the nature of the information environment provided by storytimes and the learning experiences these environments provide for young children.

1.5 Research Questions

This study builds on the previous work of Project VIEWS2 and others research to provide an understanding of the learning outcomes across multiple domains of child development occurring for children during storytimes. To accomplish this, the study asks the overall research question:

How do individuals and information interact to create learning experiences for young children in storytime?

The overall research question is addressed through the following specific research questions:

1) What is the nature of the information content and information resources used in storytime?
2) How do storytime providers communicate and share information with the children and adults attending their storytimes?
3) What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?
4) What types of learning behaviors are the children exhibiting while attending storytime?

1.6 Overview of Methodology

These research questions served as the backbone for the exploration of public library storytimes as an information environment. After reviewing various options for studying information environments (see Chapter 2), Eisenberg and Small's (1993) framework for information-based

education was chosen as the primary means to explore the information environment of storytimes. Eisenberg and Small's (1993) framework for information-based education conceptualizes the information environment for learning as an "information base." The dimensions of an information base are identified as information processes, information resources, and engaged individuals. This framework provides a lens for understanding the information environment of storytimes by focusing attention on the information resources that are provided, the information processes that storytime providers use to share information, and the roles of the individuals involved in storytimes.

This study utilized the theory of multimodality to examine the nature of communication and information sharing in storytime. Using the theory of multimodality helped to highlight the different modes of communication used in storytimes to share information with the storytime attendees and encourage them to interact with information (Jewitt, Bezemer, & O'Halloran, 2016).

For this study, the storytimes that were analyzed came from the storytime observation data that was collected as a part of Project VIEWS2. VIEWS2 was a four-year IMLS National Leadership Grant designed to test new ways to measure the effectiveness of early literacy storytimes for young children. In the VIEWS2 study, 40 libraries were chosen to participate using stratified sampling, based on the registered number of borrowers, so that libraries of all sizes would be represented in the study. At each library, three storytimes offered by the same storytime provider were observed and videotaped. Each observation included two videorecordings – one of the storytime provider offering the program and one of the children and others attending the

program. The videos of the storytime provider presenting the program were analyzed using a multi-cycle coding process to uncover the various modes/information processes, information content, and information resources incorporated in the storytimes observed. The behaviors of the adults and children in the participant video were coded to understand the roles that they play while attending storytime. The behaviors of the children in the participant video were also coded using an observation coding tool, titled Supporting Early Learning Achievement in Learning Environments (SEALE). The indicators included in the SEALE came from the Head Start Early Learning Outcomes Framework (Office of Head Start, 2015).

A survey was administered to storytime providers in Washington State, as part of the second research phase, to help to gain a broader understanding of the information environment of current storytimes. The specific purposes of the survey were to 1) understand more broadly the modes or information processes, information resources and information content, and storytime providers' expectation of the roles of individuals involved in storytimes and 2) fill in gaps present in the videos. The development of the survey was informed by the storytime observation analysis.

1.7 Conclusion

In order to be prepared for learning in school and in life, research has demonstrated that children need to be exposed to information environments that provide crucial information supports--including information resources, information processes, and engaged individuals. Public library storytimes serve as an excellent context for an exploration of information environments because they are free programs offered in informal learning environments that are available to children in most communities across the nation. Three frameworks—Information-Based Education

(Eisenberg & Small, 1993), Multimodality (Kress and van Leeuwen, 2001), Head Start Early Learning Outcomes Framework (Office of Head Start, 2015) were used in this study. Eisenberg and Small's (1993) Information-Based Education was used to elucidate the nature of the information environment by exploring the information resources and content, information processes, and roles of the individuals involved in storytime. Multimodality (Kress and van Leeuwen, 2001) helped to provide an understanding of the multiple modes for communication used in storytime and the SEALE tool was used to determine the learning outcomes occurring for children across multiple domains of child development while attending storytime.

Chapter 2: Literature Review

This dissertation has explored the information environment provided for young children by storytimes at the public library and the learning that is occurring for young children while interacting with this information environment. Public library storytimes offer an important setting for exploring the information environment provided to young children in an informal learning environment. Storytimes serve as the pillar of the early childhood programming offered by the public library and are offered in most communities across the nation. At most public libraries, different versions of storytime are offered to all children from birth to age five. While storytimes have historically been perceived as a fun activity (Albright, Delecki, & Hinkle, 2009; Williams, 1998), they have become more widely recognized as promoting early literacy (Albright, Delecki, & Hinkle, 2009; Teale 1999; Lance & Marks 2008). In addition, storytimes have acquired the goals of encouraging lifelong learning and overall school readiness (Diamant-Cohen, 2007; Celano and Neuman, 2015) as libraries have adopted the role of an informal learning environment (Howard, 2013).

Although storytimes have been widely recognized as promoting early literacy and have the goals of encouraging lifelong learning and overall school readiness, there has been limited research that examines the nature of the learning environment provided by storytime and the impact it has on the children who attend. There is some indication that storytime does impact learning. For example, most recently, Project VIEWS2 found a strong correlation between the early literacy content offered in the storytime by the storytime provider and the children's early literacy behaviors at storytime. This demonstrates that the children at storytime appear to be responding to what storytime providers are incorporating in storytimes (Campana et al, 2016). Other

research has also focused on the early literacy aspect of storytime, finding that storytimes offer early literacy experiences (Williams 1998) and help to promote early literacy learning (Becker, 2012; McKenzie and Stooke, 2007; McKechnie, 2006)

In addition to early literacy, research has found that storytime providers view storytimes as a learning experience (Williams 1998) and that other types of learning are promoted and occur in storytime. McKenzie, Stooke, & McKechnie found that storytimes serve as a community of practice, with all participants playing a role, to help other participants learn about the library and how to participate in storytime (2007). In separate studies, both McKechnie (2006) and Williams (1998) found that storytimes offered opportunities for the children attending to practice their social skills. Other studies have found that storytimes also help to support receptive listening skills (Smardo, 1983) and self-regulation skills (Becker, 2012).

Because there is a lack of systematic research that examines the nature of the information content and processes provided in storytimes and the learning outcomes that occur for children attending storytimes across multiple domains, this dissertation worked to address this gap by exploring the nature of the information environment provided by storytimes and the learning experiences these environments provide for young children.

This chapter brings together relevant theories and literature on the information environment for young children, and its multimodal nature to provide background and rationale for the study. The chapter is separated into three parts. The first part provides theoretical support for the concept of an information environment, by examining relevant learning theories. The second part provides a

review of theories, models and frameworks that could be used to help examine the information environment and identify from the literature some of the important components in an information environment that can help to support a child's learning. The third part of the chapter explores a developmental framework that was used to examine children's early learning outcomes that occur while interacting in these information environments. Ultimately this chapter will cover the theoretical, conceptual, and developmental frameworks that helped to guide and inform the study, which endeavored to the answer the following research questions.

How do individuals and information interact to create learning experiences for young children in storytime?

More specifically,

1) What is the nature of the information content and information resources used in storytime?
2) How do storytime providers communicate and share information with the children and adults attending their storytimes?
3) What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?
4) What types of learning behaviors are the children exhibiting while attending storytime?

2.1: Early Learning Theory

Research has demonstrated that a significant amount of learning for children is occurring during the first five years of life. Early learning and the support provided to children during this time

period has become a critical issue in society because these first five years are so crucial for success in school and lifelong learning (Gopnick, Meltzoff, & Kuhl 2001). Many theorists have focused on early learning, acknowledging that an internal, cognitive process is occurring but placing the emphasis on the social interaction with an adult or peer that allows the child to discover or receive the information about the concept that they are interacting with (Tudge & Winterhoff, 1993; Vygotskiĭ & Cole, 1978; Wood, Bruner, & Ross, 1976). The emphasis is on this social interaction because without it the child may not be able to access or understand the information (Walter 1994).

Because the paradigms of social constructivism and social constructionism acknowledge the social aspect of learning and knowledge creation, they offer the greatest insight into the early learning of young children. Social constructivism takes the position that the internal knowledge creation process is influenced by social interactions which bring with them cultural and historical influences (Talja, Tuominen, & Savolainen, 2005). Social constructionism emphasizes the social interaction in the creation of knowledge and the discourse that accompanies the social interaction (McKenzie, 2003; Talja et al., 2005).

Building on these paradigms, it is important to acknowledge and account for the environment and social interactions in any examination of young children's learning because the specific environments and social interactions young children are exposed to are crucial for supporting and encouraging their learning. Three theories that help to account for the role of the environment and social interactions in a young child's learning will inform this study of the information environment of storytime: Vygotsky's Zone of Proximal Development (1978),

Bronfenbrenner's Ecological Model of Human Development (1993), and Bruner's Discovery Learning (1961) and Scaffolding, developed with Wood and Ross (1976).

Vygotsky

Vygotsky viewed development not as an individual process but as an effect of the social and cultural influences represented in the individual. He focused on children as members of their culture and society and how they develop from those influences (Gray & MacBlain, 2012). From his perspective, development occurs when children learn behaviors and information that are communicated to them in interactions with others; essentially the external information becomes internalized in the child. Vygotsky felt that it was the process of the learning that created a zone of proximal development, by awakening the developmental processes that would propel the child to achieve the next level of development. His theory of the Zone of Proximal Development helps to define the relationship between two levels of a child's development. Within in the zone of proximal development, an adult should be able to identify a baseline level of any task that the child can complete independently, termed the actual developmental level. The second level, the level of potential development, would be what the child can complete with support and assistance from a more knowledgeable adult. Therefore, the zone of proximal development is the distance between the actual developmental level and the level of potential development. He felt that the zone of proximal development is different for every situation and child and as a result needs to be collaboratively defined in the interaction between the child and the more knowledgeable adult. The zone of proximal development helps to identify what the child is in the process of mastering so it takes a forward look at learning rather than just identifying what the child has mastered (Vygotskiĭ & Cole, 1978).

Bronfenbrenner

Bronfenbrenner's theory (1993), the Ecological Model of Human Development, emphasizes the impact of the various environments in which children's development occurs. While Bronfenbrenner emphasizes the impact of the environment on children's development, his theory can also be applied to children's learning (as discussed in chapter 1). His theory describes the environment in which an individual exists as a "nested structure" where there are four different levels. Moving from the innermost to the outside of the structure, these levels are: microsystems, mesosystems, exosystems, and macrosystems.

Microsystems, the innermost layer of the Ecological Model, are the main environments in which an individual exists (home, school, neighborhood). The mesosystem is a system comprised of the relationships between the microsystems. An exosystem is a system comprised of the relationships between microsystems and other environments that do not directly include the individual but may indirectly impact the individual's development. An example of an exosystem is how the parent's workplace may impact the home environment. A macrosystem is the broader culture in which the individual exists. An additional aspect of the environment is captured through his idea of a chronosystem, which is a change over time in the characteristics of the environment and/or the person (Bronfenbrenner, 1993).

To help describe how these nested environmental systems impact development in his model, Bronfenbrenner offered two general propositions about human development in his original model. The first proposition states that human development occurs through interactions, or "proximal processes", between the individual and people and other things in their environment.

The second proposition states that the influence of the proximal processes varies based on the combination between the individual, the environment and the developmental outcomes. Bronfenbrenner designated occurrences that interfered with proximal processes as 'chaos', which could be something like an unpredictable home life (Bronfenbrenner, 1993; Bronfenbrenner & Evans, 2000).

Bruner

Bruner placed a strong emphasis on the role of culture and environmental factors in learning and development, stating that "limits of growth depend on how a culture assists the individual to use such intellectual potential as he may possess" (Bruner, 1965, p. 1007). He felt that a child's environment should support a child with development and the unlocking of their mental capacities (Bruner, 1964) Bruner held that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge. The individual makes learning happen by taking incoming information and putting it to use. It is through this active process that the meaning applied to the information is determined through the context of their culture.

Bruner's theories of discovery learning (1961) and scaffolding, developed with Wood and Ross (1976), hold the most significance for early learning. Bruner felt that the purpose of education is not to teach knowledge, but instead to facilitate a child's thinking and problem solving skills, which they can then use in other situations. He placed an emphasis on learning through discovery, using past experiences to build new knowledge. Learning by discovery, or "figuring things out", allows the child to construct, transform and organize information so that it is readily available for future application and problem-solving. In addition, learning by discovery gives the

child knowledge and cognitive processes that can contribute to the rest of their cognitive life (Bruner, 1961).

Bruner felt the role of the teacher was not to impart knowledge but to support the children's learning processes, help them identify relationships between pieces of information. From this he, along with Wood and Ross (1976), developed the concept of scaffolding, where an adult can support the child's learning by breaking a task or information, which would otherwise be beyond the child's independent skills, into smaller pieces so that the information is more manageable, and the child can first work to complete the elements that are within their current skill set. With the guidance of the adult, the child can continue to work through the elements of the task or information until they have mastered it independently. This helps the child to build on information they may have already learned to extend their knowledge.

Vygotsky's, Bronfenbrenner's, and Bruner's theories all provide support for the concept of an information environment and its role in supporting a child's learning. All three theorists point to the important role of the child's environment in their learning. Bronfenbrenner, in particular, emphasizes the environment, describing microsystems as the environments in which children exist. These microsystems are the environments where children would be exposed to an information environment. Vygotsky (Tudge & Winterhoff, 1993) and Bruner (1961, 1964) further support the role of information in the environment as foundational for children's learning by describing learning as the process of internalizing information acquired from the environment, mainly through interactions with others. All three theorists also underscore the role of the adult in the child's learning, especially with the Zone of Proximal Development

(Vygotskiĭ & Cole, 1978) and scaffolding (Bruner, Wood, and Ross 1976). This emphasis on the role of the adult in the child's learning supports the importance of recognizing and accounting for the adults' role in the information environment.

2.2: The Information Environments of Young Children

Because this study endeavors to explore the information environment of storytime, theories and frameworks were needed that could guide the exploration into an information environment and help to surface the types of learning that the children are experiencing when interacting with the information environment. Because there are no current theories that examine the information environment for young children, this study will pull from multiple theories and conceptual frameworks to explore different aspects of the information environment of storytime.

Information Practices

Theories focused on information practices can help to inform this study because the concept of an information environment incorporates the types of information and the information processes that children are interacting with to encounter and experience information throughout their daily lives. Researchers have developed a wide variety of theories to explain and distinguish the many ways that information plays a role in daily life. These theories that examine information in everyday lives may emphasize the cognitive process, the social process, or both. For this study, the emphasis was on theories that acknowledge the social process as an important element. These theories, which acknowledge the social process, can be collapsed under the term information practices (McKenzie 2003), which moves the focus off of the cognitive process of information behavior to the social process involved in information seeking and use. Placing the emphasis on the social process and the context in children's information practices is important because young children are mostly reliant on others and their environment to provide information for their

learning (Walter 1994). Based on the discussion above, when looking at the information environments in which children exist, the social process and the context can be explored by examining the specific information and information resources provided by the environment and the actions of the engaged individuals (adults, older children, and peers).

While most theories and frameworks covering information practices focus on adults, there are a few that have emphasized the information practices of children. Furthermore, because Large, Nesset, and Beheshti (2008) urge caution in applying theories examining adult's information practices to studies involving children, only theories examining children's information practices were included here. Walter (1994) presents a conceptual framework of children's information needs based on research that she did with 10-year-old children. Her framework, similar to Maslow's hierarchy of needs, offers a hierarchy of information needs ranging from the most important of physiological needs to the least important of self-actualization needs. Similarly, Shenton and Dixon (2003) offer a typology of children and teens' information needs. The typology includes thirteen main types of information, ranging from self-development needs to school related needs. While both of these frameworks could offer ways to characterize the information being shared with the children, they do not provide a way to account for the role of the engaged individuals in the environment.

Kuhlthau (1987, 1989) offers a model of the information search process, based on her research done with school-age students, which incorporates the individual's thoughts, feelings, and actions in the process. However, because she places an emphasis on the active role the individual plays in their search process her model is not as applicable for young children given that they

may not play an active role in searching out necessary information because they often lack an understanding of their information needs (Walter 1994).

Koh (2011) proposes a framework for examining the information behavior of digital age youth. Her framework, based on Dresang's Radical Change theory, includes the three digital age principles of interactivity, connectivity, and access along with three types of radical change: Changing Forms and Formats, Changing Perspectives, and Changing Boundaries. Within each Radical Change type there are characteristics that describe the behaviors of digital age youth that fall under that type. While Koh's theory could be used to explore some aspects of the information environment of young children, it is not applicable to this study for two reasons. First, the characteristics are not as appropriate for use with younger children because they place the emphasis on the active role and cognitive processes of youth in their information practices. Second, her framework does not account for the role of the adult in the environment.

Eisenberg and Small (1993) present a framework for information-based education. In their framework, educational situations are composed of series of learning events. They consider a learning event to be something like a specific class or lesson (Eisenberg & Small, 1993). Most important is the "recognition of the information base as a central and essential element of the learning event" (Eisenberg & Small, 1993, p. 265). The dimensions of an information base are identified as information processes, information resources, and the roles of the "players". These dimensions are further expanded to information resources, information skills, information transfer, computer technology, nature of information, and instructional methods. The specific characteristics under each type of sub-dimensions are referred to as information attributes.

Eisenberg and Small's framework could be used to explore the information environments of young children given that it accounts for the information resources in the environment, the nature of the information content, the roles of the players, and the information transfer occurring between the players.

Two theories, sense-making (Dervin & Nilan, 1986) and information grounds (Fisher 2005), were originally developed for adults, but are appropriate for this discussion because of their relevance and their prior use in research with children. Sense-making, developed by Dervin, helps to provide an understanding of how individuals make sense of their daily lives. The theory centers on a three-part model existing of SITUATIONS-GAPS-USES. At the heart of the theory, the individual encounters a situation where they cannot move forward because they are stopped by a gap in their current understanding or knowledge. The individual resolves the issue by having some use of information to build a bridge over the gap so they can continue to move forward in their situation (Dervin & Nilan, 1986). While Sense-making is relevant to children's information practices because ultimately their information environment is helping children to learn to make sense of the world (McKechnie 1996), it is not as useful for this study, which works to characterize the broader information environment provided by a program, because the theory examines the personal experience of an individual child. In addition, McKechnie (1996) used Sense-Making in her research with preschool age children and found that it was difficult to apply given that access to young children's internal, cognitive processes are limited.

Fisher (2005) developed the theory of information grounds to help conceptualize contexts or social settings in information practice research. Information grounds are situations where people

have come together for a specific purpose or activity and end up with an unplanned information exchange. Information grounds can form anywhere and may stay tied to a specific location or may change to a new location. While Fisher developed the concept of information grounds from her work with senior citizens, it has been applied to research with tweens (Meyers, Fisher, and Marcoux 2009) and college students (Fisher, Landry, & Naumer, 2007). Fisher, Landry, and Naumer (2007) elaborated on the original theory by proposing a people-place-information trichotomy as a way of understanding and examining information grounds. The trichotomy of people-place-information could work well when characterizing the information environment of young children but given that storytimes, the object of study, are better characterized as deliberate information exchanges, the theory of information grounds is not applicable for this study.

The theories and frameworks discussed here offer different options for exploring the information environments in which individuals exist and how individuals use the information they encounter in these environments. While several of them could be used to explore aspects of a young child's information environment, the Information-Based Education (Eisenberg & Small, 1993) framework offers the most holistic option for exploring the important information attributes of a young child's information environment.

The Information-Based Education (Eisenberg & Small, 1993) framework is the most appropriate option because it accounts for the information resources, the nature of the information content, and roles of the participants. As identified by early learning theory (in the previous section), information in the child's environment is foundational to their learning. Therefore, it is important

to be able to characterize the information in specific environments, which can be done by examining the information resources and the nature of the information content the child is exposed to in the environment. In addition, the same early learning theories also emphasize the importance of the adult in a child's learning. The Information-Based Education (Eisenberg & Small, 1993) framework accounts for the adult's role by highlighting the roles of the participants in the environment. In addition, the Information-Based Education framework offers the additional component of information processes to the concept of an information environment, which can help to characterize how the information is flowing in the environment and being transferred between the participants.

Multimodality

The theory of Multimodality (Kress 2000) was used to build on and further elucidate the nature of the information processes in storytime, particularly the information transfer sub-component identified by the Information-Based Education. Because information transfer often begins with the communication of information, the theory of multimodality was used to understand the different ways that storytime providers are communicating information with their attendees. Central to multimodality is the mode, a "set of semiotic resources for meaning making" (Jewitt, 2008, p. 246), which is essentially a way to represent or communicate information (Kress 2000). While language is often thought of as the dominant mode that is used for communication, multimodality does not place an emphasis on language and instead focuses on all modes used for communication and meaning making, in order to understand the integrated, multimodal whole (Jewitt, Bezemer, & O'Halloran 2016).

Storytimes typically incorporate a wide variety of ways or modes that storytime providers use to communicate and share information with their storytime attendees. This is important because researchers have found that children's learning in enhanced through exploring and interacting with information across a variety of modes for communication (Flewitt 2013). Furthermore, some researchers have begun to view becoming literate as a social process where the child learns to make meaning through a variety of communicative processes (Flewitt 2013). Because of this, it is important to examine and explore the variety of ways that storytime providers communicate and share the information with the attendees.

People tend to use particular modes in specific contexts. As the modes are used regularly in specific contexts within communities, the modes begin to acquire regularities and patterns of use (Jewitt 2008). Therefore, the theory incorporates the assumption that the ways that different communities use modes of communication "are shaped through their cultural, historical, and social uses" (Jewitt, 2015 p. 69). Because storytimes have been identified as a community of practice where all participants contribute to the "enactment of storytime as a social setting" (McKenzie, Stooke, & McKechnie 2007 p. 10), it is possible that storytime will have its own common modes with patterns and regularities that have been shaped through cultural and social uses by the community. Examining the modes used in storytime will provide insight into these common modes that have been shaped by their cultural and social uses.

What do Young Children Need from an Information Environment?

Building on the concept of an information environment, research has demonstrated that children need to be exposed to specific things within the information environment during their first five years to prepare them for learning at school and learning for life. Using the Information-Based

Education framework as a guide, there are at least three main types of information supports that should be explored in a child's information environment: the nature of information content and information resources, the information processes and information transfer, and engaged individuals. Examining these three types of information supports with regards to school readiness and life-long learning can help to indicate some of the important attributes of an information environment that can support a young child's learning.

The term school readiness is often used to refer to whether children have the skills and behaviors they need to be successful in a formal learning environment (Cross & Conn-Powers, 2011). At this time there is not a universal set of knowledge, skills, and behaviors that constitutes being "ready for school". However, many educational organizations and researchers are focused on this and most agree that school readiness requires a multi-faceted approach that should include the following five domains, as identified by the National Education Goals Panel: physical well-being and motor development, social and emotional development, approaches to learning, language development and cognition and general knowledge (Child Trends, 2001). In addition, when reviewing the latest research on school readiness predictors, Cross and Conn-Powers (2011) identified school-entry math skills, attention skills, school-entry language and reading skills, and fine motor skills as strong predictors. Physical and mental health and well-being was identified as related to school readiness but not necessarily a predictor of school readiness. Social and emotional behavior was recognized as an uncertain predictor because of conflicting research findings.

While school readiness is important because children will spend a large amount of their childhood and adolescence in a school or academic environment, there has been a more recent

shift in how we view learning. An increased focus has been placed on learning as a "life-long," "life-wide," and "life-deep" process, so children also need to be equipped with the knowledge, skills, and behaviors to support them in lifelong learning, in addition to school readiness skills. Lifelong learning is different from school learning in that it is more centered around the learner instead of the curriculum. Lifelong learning can account for the individual needs of learners as well as their cultural and economic backgrounds (Institute for Museum and Library Services, 2009). Informal learning environments, such as museums and libraries, are well equipped to support lifelong learning by offering learning opportunities that are nonlinear, open-ended, ongoing and self-paced. In addition, learning in informal learning environments can often be a social experience with friends and family, giving children the opportunity to learn by observing and interacting with these individuals (Diamond, Luke, & Uttal, 2009).

Information Resources

At the heart of the information environment are the information resources. This information support can be categorized into two subtypes: the nature of information content and the information resources (including the subjects and types). While many educators, policy-makers, and researchers agree that it is most important that children arrive to school healthy, having adequate social and emotional skills, able to listen and follow directions (Cross & Conn-Powers, 2011), research has demonstrated that knowledge of specific literacy, math, and subject specific information can contribute later academic success. To support their life-long learning and school readiness, a child should be exposed to:

- literacy related information including phonological awareness, alphabet knowledge (National Early Literacy Panel, 2008), oral language (Dickinson, Golinkoff, & Hirsh-

Pasek, 2010), vocabulary (Duncan et al, 2007), and their own cultural literacy practices (Street, 1997; Stephens, 2000);

- basic math related information including numbers, ordinality, and one-to-one comparison (Duncan et al, 2007); and
- subject specific information about the world (Teale, 2013; Grissmer et al, 2010).

Certain types of information resources are important in a child's learning including print resources and digital media. Engaged adults and peers could be included in the information resource category but given their crucial role in a child's learning they have been kept as a separate type of information support. Because of their young age, children may receive or encounter most of these types of information content and information resources through information processes and information transfer.

Literacy knowledge is crucial to a child's life-long learning and school readiness because literacy serves as a base for most everything an individual will do in their life. Important literacy information that should be included in a child's information environment is oral language (Dickinson, Golinkoff, & Hirsh-Pasek, 2010), vocabulary (Duncan et al, 2007), phonological awareness and alphabet knowledge (National Early Literacy Panel, 2008; Phillips & Piasta, 2013), and their own cultural and social literacy practices.

Oral language information and knowledge, the ability to communicate verbally, is crucial to a child's everyday life and to their reading skills especially with regards to comprehension of what they are reading (Dickinson, Golinkoff, & Hirsh-Pasek, 2010; Hogan, Cain, & Bridges, 2013;

Lonigan & Shanahan, 2010). In addition, developing an extensive vocabulary can also contribute to oral language and literacy success (Duncan et al., 2007; Tabors, Beals, & Weizman, 2001). Both oral language and vocabulary can be developed through talking, shared book reading, and other social interactions.

Phonological awareness, an awareness of the sounds that make up words, and alphabetic knowledge, an awareness of letters and the sounds they make, can also be important to include in a child's information environment because both types of knowledge can serve as important contributors to later literacy success (National Early Literacy Panel, 2008; Phillips & Piasta, 2013). The mention of these concepts does not mean that they should be explicitly taught to young children. Instead the skills should be encouraged and supported in naturalistic ways. Finally, children need to be exposed to the multifaceted ways that literacy can be used in everyday life, in their families, their cultures, and their world (Dail & Payne, 2010).

Research has demonstrated that entering school with basic math knowledge can be one of the strongest predictors of later academic success (Duncan et al, 2007; Cross & Conn-Powers, 2011). Duncan et al. (2007) determined that basic math knowledge, such as knowledge of numbers, ordinality and one-one comparisons, are the strongest predictor of later learning success. In addition, knowledge of these math concepts is a strong predictor of later reading achievement. As a result, it is important that basic math information be included in a child's information environment. Information about the world across the different domains of child development (subject specific information – i.e. science, culture) should also be included in a child's information environment. Grissmer et al. (2010) found that subject specific knowledge was a

strong predictor of later reading and science success. Teale (2013) noted that the focus in early childhood on early literacy skills while neglecting subject specific information contributes to the struggles many children face in the middle grades when they need to be able to read across different subjects. Furthermore, Neuman, Newman, and Dwyer (2011) found that the acquisition of subject-specific vocabulary and subject-specific knowledge help to support each other, with the successful acquisition of one leading to a more successful acquisition of the other.

Information can be delivered through many types of information resources. For a young child, some of the important types of information resources, outside of engaged adults and peers, are print resources and digital media. Exposure to print resources is crucial to a child's emergent literacy and future literacy success. Access to books and other print resources can enhance emergent literacy development. It can also support increased vocabulary and subject specific knowledge acquisition (Neuman & Celano, 2012). Books are especially important to a child's information environment because they provide a big portion of the print to which a child will be exposed as well as allowing the child to interact with print independently and in a developmentally appropriate manner. Children should experience many types of books including picture and narrative books, informational books, and poetry and word-play books (Teale, 1999). From picture and narrative books, children gain information on how narrative works; they learn to appreciation stories and books; and they can acquire cultural information (Teale, 1995; Pentimonti, Justice, & Piasta, 2013). From informational books, children can learn subject specific knowledge and develop an understanding that texts can be used for different purposes (Teale, 1995; Pentimonti, Justice, & Piasta, 2013). Finally, rhyming, poetry, and word-play books can help children to develop phonemic awareness skills (Teale, 1999).

Digital media have grown to be an important type of information resource in a child's information environment. While it is apparent that children are learning from digital media, there is a relative lack of research that demonstrates how and what types of impact that digital media is having on a child's learning (Blanchard & Moore, 2010). What is clear is that digital media is an important tool in our lives today and is present in many children's lives beginning in infancy (Zimmerman, Christakis, & Meltzoff, 2007) so it should be an important part of a child's information environment. Digital media have been shown to support some essential school readiness characteristics such as attention and emergent literacy skills (Burnett, 2010; Blanchard & Moore, 2010). In addition, because of media saturation in today's homes children are experiencing frequent exposure to technology and as a result, developing digital fluency (Blanchard & Moore, 2010; Rideout, Vandewater, & Wartella, 2003). As digital media use for education increases in the future, children's digital fluency may help to contribute to future academic success as well as success in life-long learning.

Information Processes and Information Transfer

Information processes and information transfer are an incredibly important information support due to the young age of the children. Because young children lack the capability to find and understand needed information or even articulate many of their information needs (Walter, 1994), most of the information will be shared with or acquired by the children through some type of information process. Also, due to the young age of the children, it is important that the information processes be developmentally appropriate and child-centered.

Information processes that have been identified as important to a child's school readiness and life-long learning are social interactions (Vygotskiĭ & Cole, 1978), shared book reading (Pentimonti, Justice & Piasta, 2013), play (Fleer, 2010; Roskos & Christie, 2000), scaffolding (Wood, Bruner & Ross, 1976), and guided participation (Rogoff 1991). Although these processes have been previously identified and studied as learning events and interactions, for this study they have been reconceptualized as information processes because children are being exposed to and receiving information during these interactions.

In addition to contributing to a child's learning, many of these information processes can also help to build a child's attention skills which can also contribute to a child's school and life-long learning success (Duncan et al., 2007). Social interactions are crucial to a child's information environment and encompass most of the ways that information transfer takes place. Some of the more common interactions in which information transfer can occur are talking and conversations, shared book reading, hands-on experiences, play, scaffolding and guided participation.

Social interactions are important for a child's information environment because young children receive a lot of their information through adults and peers. Talking is one of the most important information processes in which a child can participate. The talking should occur in language-rich, information-rich conversations covering all subjects (Snow, Tabors & Dickenson, 2001). Extended conversations give children opportunities to listen to and practice narrative and explanatory talk (Beals, 2001). These conversations can also contribute to a child's oral language, vocabulary, and subject specific knowledge. Low-income children have been found to

participate in fewer conversations and as a result tend to have smaller vocabularies (Hart & Risley, 1995). Conversations and talking between a parent and child can also provide information that contributes to the child's understanding of the language, beliefs, and behaviors of their cultures (Beals, 2001). Singing together is another social interaction that can encourage learning. Singing can expose children to new vocabulary (Dickinson, 2001) as well as helping them to develop phonemic awareness and learn about rhyming (Teale, 1995).

Shared book reading is another important information process that can occur between adult and child. The impact of shared book reading on a child's literacy has been widely examined (DeTemple, 2001; Pentimonti, Justice, & Piasta, 2013; Fletcher & Reese, 2005). Shared book reading can contribute to later reading success (Bus, van Ijzendoorn, & Pellegrini, 1995), vocabulary and oral language development (Fletcher & Reese, 2005; Senechal & LeFevre, 2001), and subject specific knowledge (Neuman and Celano, 2012). However, the effectiveness of shared book reading depends on how the shared book reading is done. It is not just the reading of the words in the story but "the language and the social interaction that surrounds the book during the reading…that causes storybook reading to be so powerful an activity for young children" (Teale, 1995, p. 118). Many parents tend to engage their children in the book, asking questions, labeling pictures, and having conversations about the book (Fletcher & Reese 2005; McKechnie, 1996).

Research has found that the use of specific techniques, such as dialogic reading (Fletcher & Reese, 2005) and print referencing (Pentimonti, Justice, & Piasta, 2013), can add to the effectiveness of the shared reading interaction. Dialogic reading is a technique that involves

encouraging children to talk about the story and the pictures, asking wh- questions and providing feedback that extends the child's statements. While dialogic reading has been used with mixed results (Fletcher & Reese, 2005; Senechal & LeFevre, 2001; Schickedanz & McGee, 2010), research suggests that quality dialogic reading can impact children's language learning (Schickedanz & McGee, 2010). Print referencing is a technique where the adult calls attention to print using verbal and nonverbal methods including: tracking print with a finger as it is read, pointing out print and commenting on print. The use of print referencing techniques has been demonstrated to have a positive impact on children's early literacy skills (Pentimonti, Justice, & Piasta, 2013).

Hands-on experiences, such as writing, are important information processes that can also support children's learning, preparing them for school and life-long learning. The hands-on exhibits in children's museum have been demonstrated to encourage children's learning (Puchner, Rapoport, and Gaskins, 2001). In addition, many aspects of play can be hands-on, contributing to a child's learning. Writing is also a hands-on experience that can have an important impact on a child's learning. Writing allows children to communicate information as well as contributing to their acquisition of information that supports the development of their literacy skills (Bodrova & Leong, 2009). Early practice with art and writing can help to develop fine motor skills, which can contribute to later academic achievement (Grissmer, Grimm, Aiyer, Murrah, & Steele, 2010). Writing can also be an important information process where children explore and practice with alphabetic knowledge and phonological awareness information (Bloodgood, 1999; Whitehurst & Lonigan, 2001).

Play is an important information process in a young child's information environment because it can be a self-motivated process where they can gain information from adults and peers. Play is described as being motivated and driven by the child, enjoyable, process-oriented, active, and rule-governed (Isenberg & Quisenberry, 2002). In the process of play, children can learn important skills and knowledge that will help to set the stage for later academic and learning success, including self-regulation, oral language abilities, and social skills (Kagan, Scott-Little, & Frelow, 2009). In addition, literacy and numeracy enriched play settings have been found to encourage emergent literacy, writing, and numeracy activities and learning in play (Roskos & Christie, 2009). Play can also serve as an important process for acquiring cultural information. When children play, they have the opportunity to imitate the behaviors of others within their culture, therefore learning crucial information about their cultural practices. By playing with diverse groups of adults and peers, they also have the opportunity to be exposed to cultural practices that differ from their own (Isenberg & Quisenberry, 2002).

Wood, Bruner and Ross (1976) defined scaffolding as a process where an adult can support the child's learning by breaking information into to smaller pieces so that the information is more manageable. Scaffolding is an important method of sharing and shaping information with children. Once the child masters a smaller, simpler piece, they can advance to a more complex piece until they have mastered the information. This helps the child to build on information they may have already learned to extend their knowledge. Having an adult to scaffold the information for them allows children to interact with the information in smaller, more manageable pieces. At children's museums, children have been found to stay at museum exhibits longer and learn more

when an accompanying adult is actively involved in scaffolding their learning process (Puchner, Rapoport, & Gaskins, 2001).

Guided participation (Rogoff, 1991) is another significant method for sharing and shaping information with young children because it covers informal interactions. It is similar to scaffolding in that adults use their knowledge to help bridge children's existing knowledge with new knowledge, particularly around culturally valued practices and experiences. It tends to involve interactions around shared activities, routines, and everyday interactions. However, where scaffolding is more of a formal teaching interaction, guided participation tends to occur in the less formal interactions that occur between children and adults. It is not a specific type of support for learning, like scaffolding; it really more refers to the co-constructed interaction between a child and an adult, emphasis is placed on the child as an active learner and the adult as the "expert". The child can initiate and continue to prompt the interaction while the adult is serving as a guide for the child.

Engaged Adults and Peers

For a child, having an engaged adult participate in their learning is the most important information support in their information environment because the adult helps to deliver, mediate, and shape the information in addition to possibly constructing the information environment. The term 'engaged' is used because it is not enough for the adult to just be present. The adult needs to be actively engaged with the child in order to optimize the child's learning from information in their environment (Teale, 1995; Puchner, Rapoport, & Gaskins, 2001; Neuman & Celano, 2012). Young children, for the most part, lack the capability to find and understand needed information or even articulate many of their information needs (Walter, 1994). Therefore, the

adult takes on the role of information intermediary (McKenzie, 2003) for the child. In this capacity they can identify the child's information need as well as present or shape the information presented to the child. An engaged adult is crucial because in today's information-rich world young children are constantly exposed to information necessary for their learning but without an adult to mediate or shape the information, the learning may not occur. Much attention has been focused on the parent as the adult presence in a child's life but these adults can also include caregivers, educators, librarians, and others.

In addition to learning theorists recognizing the importance of an adult in a child's learning, research has also demonstrated the importance of the adult in a child's learning. Puchner, Rapoport, and Gaskins (2001) demonstrated, in children's museums, that learning was more likely to occur for children when an adult was present. Furthermore, they found that to impact the child's learning the adult needed to be actively involved in the social interaction surrounding the learning event. McManus (1987) found that in a museum environment adult-child groups were likely to engage in longer conversations and have lengthier interactions with an exhibit than a child-child peer group, which ultimately helps to set the stage for a richer learning experience. Neuman and Celano (2012), in a study examining the differences of children's environments between a lower-class area and middle to upper class area, identified the missed learning opportunities that occurred in public library environments because parents in a low-income area did not have the knowledge and understanding of how to encourage their child's learning during everyday interactions.

The impact of a child's home environment on a child's literacy learning has also been well documented. In particular, research has focused on the behavior of the parents and their literacy interactions with their child. Leseman and de Jong (1998) describe the home literacy environment as a "microsocial system of constructive and co-constructive processes" (p. 298) that includes four necessary components: literacy opportunity, instruction quality, cooperation and social-emotional quality. Parents play a crucial role in all four of the components. Because of the young child's undeveloped skills, parents and other adults need to promote and mediate the child's experience with the literacy practice (Leseman & de Jong, 1998). During shared book reading, parents have been found to be frequently using various instructive and supportive strategies to enable their children's learning (Fletcher & Reese 2005; McKechnie, 1996). In addition, children whose parents read to them frequently and attempt to teach them literacy skills tend to have stronger literacy skills than children whose parents did not read as frequently or try to teach literacy skills (Senechal & LeFevre, 2001; Bennett, Weigel & Martin, 2002).

Peers, to a lesser extent than an adult, can also impact a child's learning. Bandura's concept of imitation suggested that children learn from the imitation of their peers, as well as adults (Tudge & Winterhoff, 1993). Through interacting with peers, children can learn important social, emotional and language skills (Becker, 2011). Peer interactions involving books may also allow children to practice important emergent literacy skills, such as pretend reading and discussions about books (Becker 2011). In fact, Fleer (2010) highlights the importance of looking at the interactions within a group of children working together on a task because the zone of proximal development can be higher for a child when they are working in a group of children than when they are working independently. By working and playing together, peers are able to increase

each other's learning. For this study, peers will not be included due to the exploratory nature. However, the role of peer interactions in an information environment is a possibility for future research

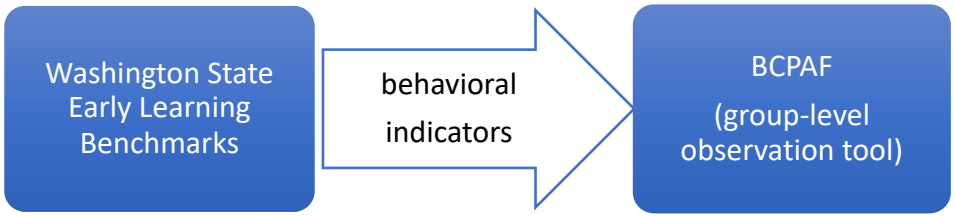
2.3: Children's Early Learning Outcomes

In addition to understanding the nature of the information environment, it is necessary to understand the outcomes that are occurring for children while interacting in these environments. To capture and identify outcomes, children's observable behaviors were examined across multiple domains of learning and child development.

As early learning has come to the forefront in the education realm, states and national organizations have worked to provide resources for parents, caregivers and childcare organizations to help them understand how to prepare children for school and lifelong learning. Some common resources that states and other organizations have developed are sets of early learning and developmental outcomes for young children across multiple domains of child development. Currently, every state has its own set of early learning and developmental outcomes that establish behaviors that young children should be able to accomplish before and up to 60 months of age (Early Childhood T&TA System, 2016). These sets of early learning and developmental outcomes often carry a variety of names including 'guidelines' or 'benchmarks', each of which highlights specific outcomes. In addition, there are some national level sets of early learning and developmental outcomes, one of which is the Head Start Early Learning Outcomes Framework (Office of Head Start, 2015).

Examining outcomes for young children within informal learning environments, such as public library programs, has historically been problematic because children may not attend each week and there may be a wider range of ages attending the program. In addition, libraries and other informal learning environments tend not to assess and track individual children (Campana et al 2016). Furthermore, the individuals offering the early learning programs (i.e. librarians and other educators) have struggled with understanding what is meant by outcomes and how to identify and measure them (Becker, 2015).

To address this issue, Feldman (2010) developed a tool called Benchmarks for Curricular Planning and Assessment Framework (BCPAF), to examine children's learning outcomes at a group level. The state-level early learning outcomes for Washington State were used in BCPAF's development because BCPAF was developed with early learning organizations that are located in Washington State. BCPAF uses the behavioral indicators from the Washington State Early Learning Benchmarks (Kagan et al 2005) to examine children's learning outcomes across five domains of child development - in the 0-9 months, 18-36 months, 36-60 months age ranges.



A specific observation technique is used with BCPAF. A researcher observes the group of children participating in the program and takes field notes on the behavior of the children in the group. Every effort is made, on the part of the researcher, to scan the group of children and take

notes on specific behavioral occurrences from as many children as possible in the group. Afterwards, the field notes are used to complete the BCPAF tool, marking indicators in the tool as observed if they were observed in any of the behavioral occurrences exhibited by the children (Campana et al 2016). BCPAF and its observation technique have been used successfully in libraries (Campana 2016; Feldman 2011), museums (Feldman 2010), and preschools (Feldman 2011).

As BCPAF is based on the Washington State Early Learning Benchmarks, it is not as suitable for use in early childhood programs in other states because the early learning outcomes differ from state to state. Because there are no other tools, besides BCPAF, that can be used to determine early learning outcomes at the group level, there is currently not a tool that is applicable to all states. Therefore, it was necessary to find a national level set of early learning outcomes that can be used with a variety of states. For this study, the Head Start Early Learning Outcomes Framework was used to determine the learning outcomes occurring for young children in storytime,

The Head Start Early Learning Outcomes Framework is a national level framework that provides a set of "observable skills, behaviors, and concepts" across multiple domains of child development that children ages 0-5 should be able to accomplish and master during two broader age ranges (under 36 months and under 60 months) (Office of Head Start 2015). The five domains of child development covered in the framework are: approaches to learning, social and emotional development, language and literacy, cognition, perceptual, motor, and physical development. The Head Start framework provides behavioral indicators, across multiple age

groups within the 0-5 age range, that describe the observable skills and behaviors that children should be able to accomplish (Office of Head Start 2015).

Similar to how the behavioral indicators from the Washington State Early Learning Benchmarks were used as the coding indicators in BCPAF, the behavioral indicators, for the age groups in the 36-60 month age range, from the Head Start Early Learning Outcomes Framework were transformed into an observation coding tool, titled Supporting Early Learning Achievement in Learning Environments (SEALE), that was used with the observations in this study to surface the children's learning outcomes across multiple domains of child development. An observation method similar to what was used with BCPAF was used in this study (see Chapter 3 for details).

2.4 Conclusion

This chapter presented three supporting literatures for this study: 1) early learning theory; 2) information behavior/information practices literature; and 3) early learning and child development literature.

The first section delved into early learning theory to provide theoretical support for the concept of an information environment and its importance for the learning of young children. The theories and writings of Vygotsky, Bronfenbrenner, and Bruner all provide support for the concept of an information environment, highlighting information as crucial for a child's learning

and the importance of an engaged adult to shape, share, and scaffold the information for the child.

The second section explored theories covering the information practices of children and young adults with the goal of uncovering a model that could be used to examine the information environment for young children. Because there is currently not a theory that examines the information environment for young children, this study used a combination of two theories/frameworks to guide the research. Information-Based Education (Eisenberg & Small, 1993) helped to examine the information environment provided by storytime by characterizing the three dimensions of an information base: the information resources and nature of the information content; information processes and information transfer; and roles of the participants. Multimodality (Kress 2000) helped to guide the examination of how storytime providers are communicating and sharing information with their participants.

The second section also examined early learning literature to provide an understanding of some of the important attributes, as established by research, which can help to prepare a child for school-readiness and lifelong learning. These were explored using the three dimensions of an information base as a guide: the information resources and nature of the information content; information processes and information transfer; and roles of the participants (Eisenberg & Small, 1993). While the different attributes of these three dimensions vary depending on the learning environment, research does provide insight into some of the specific information attributes that can contribute to helping a child become ready for school and lifelong learning.

Finally, in the third section, options for exploring learning outcomes for young children at the group level were presented. Because of the lack of a national tool that examines group level learning outcomes for young children, the behavioral indicators from the Head Start Early Learning Framework (Office of Head Start 2015), a national set of early learning outcomes, were transformed into the SEALE observation tool. The SEALE tool was used in this exploratory study to surface the learning outcomes, that occurred for a group of children across multiple domains of child development, while participating in the information environment provided by storytime.

Chapter 3: Methodology

Because children need to be prepared for learning throughout their life, both in and out of school, they need to acquire the knowledge, skills, and behaviors in early childhood that will enable them to be successful in future academic environments and learning in everyday life. (Horrigan 2016; Norman 2012). They can aquire these knowledge, skills, and behaviors by participating in information-rich environments that provide supports for their learning and development. A supportive environment includes essential components such as information resources, information processes and engaged adults.

This study examined storytime as an information environment to understand the information supports provided during the program and their multimodal nature. In addition, the study also examined the learning that occurs for children while attending the program to begin to understand the learning that occurs for children while interacting in the information environment. Storytimes were chosen as the object of research because:

1) They are offered by public libraries, a predominant informal learning environment found in most communities
2) They are a free resource offered to young children and their caregivers by the public library
3) They are the most common program for young children found in libraries across the nation.
4) They are commonly thought of as a fun, educational experience

5) As part of the library's array of programs for young children, they have the goal of school-readiness and lifelong learning.

The purpose of this study was to uncover the nature of the information environment in storytime, provide detail on the multimodal aspects of the information environment, and determine the various types of learning occurring for children attending storytime. The findings help to provide a greater understanding of the information environment that storytime providers are designing for the attendees as well as a greater understanding of the learning outcomes that are occurring for children while interacting in the information environment.

The overall research question was:

How do individuals and information interact to create learning experiences for young children in storytime?

More specifically,

1) What is the nature of the information content and information resources used in storytime?
2) How do storytime providers communicate and share information with the children and adults attending their storytimes?
3) What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?

4) What types of learning behaviors are the children exhibiting while attending storytime?

3.1 Frameworks

Three frameworks were used to guide the data collection and analysis in the study: Eisenberg and Small's (1993) framework for Information-Based Education, Multimodality (Kress 2010), and the Head Start Early Learning Outcomes Framework (Office of Head Start 2015).

Information Base for Learning

Exploring the information environment of storytime was done using Eisenberg and Small's (1993) framework for Information-Based Education, which conceptualizes the information environment for learning as an "information base." The dimensions of an information base are identified as information processes, information resources, and engaged individuals.

The model of an information base for learning provided a lens for understanding the information environment of storytime by examining the information resources and the nature of the information content that are provided by the storytime provider, the information processes that are used by the storytime provider to share the information, and the roles of the individuals that are involved in storytime. This framework was used to guide the analysis of storytime providers' programs, coding for the information resources and information processes incorporated in storytime as well as the roles the storytime provider, children, and the parents/caregivers play during the program.

Multimodality

Understanding the multiple ways that storytime providers communicate and share information during storytime was accomplished using the theory of Multimodality to examine the nature of

communication and information sharing in storytime. Multimodality focuses on the ways, or modes, that individuals use to communicate and make meaning of their world (Kress 2010). The theory incorporates the assumption that the ways that different communities use modes of communication "are shaped through their cultural, historical, and social uses" (Jewitt, 2015 p. 69).

Given that storytimes have been identified as a community of practice where all participants work to contribute to the community environment (McKenzie, Stooke, & McKechnie 2007), it is possible that storytime will have its own common modes for communication and information sharing. While language is often thought of as the dominant mode that is used to communicate, multimodality does not place an emphasis on language and instead focuses on all modes used for communication and meaning making, in order to understand the integrated, multimodal ensemble (Jewitt, Bezemer, & O'Halloran 2016). The theory of Multimodality was used to guide the more detailed analysis of the information sharing processes identified under the Information-Based Education framework (Eisenberg and Small 1993).

Head Start Early Learning Outcomes Framework

The Head Start Early Learning Outcomes Framework (Office of Head Start 2015) was used to reveal the early learning outcomes across multiple domains of development that are occurring for children at storytime. The framework was transformed into the SEALE tool in the same way that the Washington State Early Learning Benchmarks were transformed into Benchmarks for Curricular Planning and Assessment Framework (BCPAF) (Feldman 2010).

BCPAF is an observation tool that was used in Project VIEWS2 to demonstrate the early literacy outcomes occurring for children attending storytime (Campana et al. 2016). BCPAF contains benchmark indicators that can be used to code behaviors in groups of children across three age ranges: 0-18 months, 18-36 months, and 36-60 months (Feldman 2010). In VIEWS2, BCPAF was used to perform quantitative coding of field notes, which were taken of the children's behaviors, to help provide an understanding of the early literacy behaviors occurring during storytime.

The Head Start Early Learning Outcomes Framework is a national level framework developed by the nation's leading researchers and based on extensive early learning research. It offers a set of indicators across multiple domains of child development that children ages 0-5 should be able to accomplish and master during two broader age ranges (under 36 months and under 60 months) (Office of Head Start 2015). The indicators that "describe the specific, observable skills, behaviors, and concepts that children should know and be able to do" (Office of Head Start 2015 p. 7) were used to perform a quantitative coding of field notes, which were taken of the children's behaviors, to provide an understanding of the early learning behaviors across multiple domains of child development occurring during storytime. As discussed in Chapter 2, this framework was chosen for use in this study over BCPAF because, while BCPAF is based on one state's early learning outcomes, the Head Start framework is a national set of early learning outcomes. Because BCPAF is the only tool of its kind, there is currently not a tool that is applicable to all states.

Supporting Early Learning Achievement in Learning Environments (SEALE tool)

The framework covers five domains of child development: approaches to learning; social and emotional development; language and literacy; cognition; and perceptual, motor, and physical development. For preschoolers, the domains of cognition and language are split because "learning becomes more differentiated as children get older" (Office of Head Start 2015, p.6). The domain of cognition is split into 'mathematics' and 'scientific reasoning' and the language and literacy domain is split into 'language and communication' and 'literacy' (see Table 1).

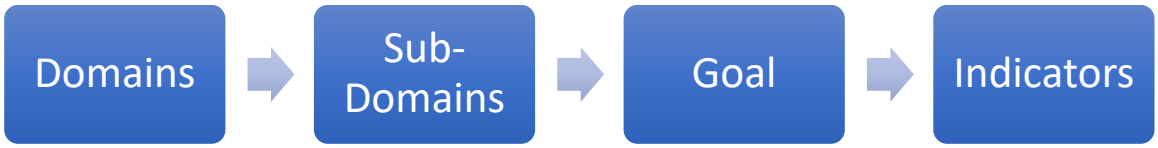
Table 3.1: Domains in the Head Start Early Learning Outcomes Framework

	Approaches to Learning	Social and Emotional Development	Language and Literacy	Cognition	Perceptual, Motor, and Physical Development
Infants/ Toddlers	Approaches to Learning	Social and Emotional Development	Language and Communication	Cognition	Perceptual, Motor, and Physical Development
Preschoolers	Approaches to Learning	Social and Emotional Development	Language and Communication	Mathematics Development	Perceptual, Motor, and Physical Development
			Literacy	Scientific Reasoning	

Note: Table content from Office of Head Start. (2015). Head Start Early Learning Outcomes Framework: Ages Birth to Five. Washington, D.C.: Administration for Children and Families. Retrieved from https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf

The framework is organized into five elements (see Figure 1). The domains listed above sit at the top-level. Each domain is split into sub-domains, which are then split into goals. The goals are split into developmental progressions, which contain indicators (or behaviors and skills) that children will demonstrate when learning the concept covered by the broader goal. Finally, there is another set of indicators for each goal that children should be able to demonstrate at the end of each broader age range (Office of Head Start 2015).

Figure 3.1: Head Start Early Learning Framework Organization



Because this study only included preschool storytimes (36-60 months), only the indicators from the < 60 months age group were utilized. In the Head Start Framework, for the < 60 months age range, the indicators are split up into categories for 36-48 months and 48-60 months, with a set of additional indicators that children should be able to demonstrate at the end of the <60 months age range (Office of Head Start 2015) (see Table 2). The indicators for each broad age range were used to code the behaviors of the children attending storytime (see Table 2).

For this study and the SEALE tool, the indicators from the 36-48 months and 48-60 months Head Start categories were collapsed into one group to better align with the 36-60 months age range being observed.[1] Duplicate indicators that occurred as a result of the reorganization were

[1] The VIEWS2 preschool storytimes were targeted towards 36-60 months.

removed. All of the Head Start indicators from the three categories in the < 60 months age group (36-48 months, 48-60 months, and < 60 months) were used to code the entire 36-60 months age group in the storytime observations (see Table 3).

Table 3.2: Example of a domain, sub-domain, goal, developmental progression, and indicators found under the domain of Social and Emotional Development

Domain. Social and Emotional Development		
Sub-domain. Relationships With Adults		
Goal P-SE 1. Child engages in and maintains positive relationships and interactions with adults		
Developmental Progression		
36-48 months	48-60 months	By 60 months
→		
♦ Engages in positive interactions with adults, such as by demonstrating affection or talking about ideas. ♦ Is able to separate from trusted adults when in familiar settings.	♦ Clearly shows enjoyment in interactions with trusted adults ♦ Demonstrates skill in separating from these adults with minimal distress when in a familiar setting.	♦ Interacts readily with trusted adults. ♦ Engages in some positive interactions with less familiar adults, such as parent volunteers. ♦ Shows affection and preference for adults

♦ Uses adults as a resource to solve problems.	♦ Initiates interactions with adults ♦ Participates in longer and more reciprocal interactions with both trusted and new adults.	who interact with them on a regular basis. ♦ Seeks help from adults when needed.

Note: Table content from Office of Head Start. (2015). Head Start Early Learning Outcomes Framework: Ages Birth to Five. Washington, D.C.: Administration for Children and Families. Retrieved from https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf

Table 3.3: Example of Coding Instrument for Goal P-SE 1

Domain: Social and Emotional Development		
Sub-domain: Relationships With Adults		
Goal	Indicator	Observed
P-SE 1	Engages in positive interactions with adults	
P-SE 1	Is able to separate from trusted adults when in familiar settings.	
P-SE 1	Uses adults as a resource to solve problems / Seeks help from adults when needed.	

P-SE 1	Clearly shows enjoyment in interactions with trusted adults	
P-SE 1	Initiates interactions with adults	
P-SE 1	Participates in longer and more reciprocal interactions with both trusted and new adults.	
P-SE 1	Interacts readily with trusted adults	
P-SE 1	Shows affection and preference for adults who interact with them on a regular basis	

Note: Table content from Office of Head Start. (2015). Head Start Early Learning Outcomes Framework: Ages Birth to Five. Washington, D.C.: Administration for Children and Families. Retrieved from https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf

3.2 Research Design

This study utilized a mixed-methods design in order to answer these research questions and shed light on the information environment and learning outcomes provided by storytime at the public library. The benefit of using mixed methods was that incorporating qualitative and quantitative data allowed for a more complete investigation into the phenomenon being studied (Creswell 2015; Fidel 2008), helping to "amplify the richness and complexity of the research findings" (Fidel 2008 p. 266). Therefore, the use of mixed methods in this study helped to provide a more comprehensive view of the information environment of storytime and the learning occurring for children while attending it (Creswell 2015).

In order to gain a comprehensive understanding of the information environment provided by public library storytimes, an exploratory sequential mixed-methods design was used in the study. In an exploratory sequential design, the qualitative methods are used first and then subsequent quantitative phase is built on the findings from the qualitative phase (Creswell 2014). Two phases were incorporated in the exploratory sequential design. Phase 1 consisted of qualitative observations of video-recorded public library storytimes and phase 2 consisted of a subsequent quantitative survey administered to a broader sample of storytime providers (See Table 4 for more detail).

Table 3.4: Phases of the research study

Phase	Participants	Activity	Data Type	Research question
Phase 1				
Storytime Observations	Storytime Providers	Observation and field notes of the video-recorded content of storytime program and the storytime providers' behaviors	Qualitative	1, 2, & 3
Storytime Observations	Children attending storytimes	Observation and field notes of video-recorded children's	Qualitative field notes/ Quantitative coding	3 & 4

		behaviors at storytime		
Storytime Observations	Parents/caregivers attending storytimes	Observation and field notes of video-recorded parents/caregivers behaviors at storytime	Qualitative	3
Phase 2				
Survey	Storytime providers from across Washington State	Survey storytime providers	Quantitative	1, 2, 3 & 4

Phase 1: Storytime Observations

The research questions in this study were answered, for the most part, through observations of video-recorded storytime programs delivered by the storytime providers and of video-recordings of the children and parents/caregivers attending the storytimes. Observations were chosen as the primary method because observations of the storytime provider offering the storytime and the attendees participating in the program provide the benefits of 1) gaining a better understanding of the social, cultural, and physical context of the programs and 2) observing the program in real-time, possibly discovering things that regular participants would not attend to (Patton 2002). In addition, observations have been found to be an effective method for studying children's behaviors in library programs (McKechnie 2006).

In this study, observations provided the best method to gain access to the program, its content, and its attendees because interviews, surveys, and other self-reporting measures would be limited in what they could uncover about the actual content of the program and the attendees' behaviors while attending the program. While the presence of an observer can alter the behavior of the individuals being observed, video-recording observations can be less obtrusive (Patton 2002).

Video-based fieldwork has become a more prevalent method of capturing data in qualitative fieldwork because it can "greatly increase the quality of field observations" (Patton 2002 p. 308). Because video recording captures the temporal and sequential structures of the object of study, it allows the researcher to focus the observation by pausing or slowing down the recording without impacting the integrity of the observation (Jewitt 2012). In addition, the use of video-based fieldwork has been found to offer several affordances in capturing multimodal nature of the data (Jewitt 2012; Hackling, Murcia, Ibrahim-Didi, & Hill, 2014).

Video-based fieldwork does have its limitations. Because the view is limited to the range of the camera lens, the video-recording will inevitably exclude individuals and things occurring in the environment that are not in camera range. Because of storage limits, video-based fieldwork is often constrained to specific time limits, possibly excluding important events (Jewitt 2012). Finally, technical and sound issues can often affect the quality of the video recording.

Video-recorded storytimes, from twenty different libraries, taken as part of a previous study, VIEWS2, were utilized for this study. VIEWS2, a four-year Institute for Museum and Library

Services National Leadership Grant funded project, was designed to test new ways to measure the effectiveness of early literacy storytimes for young children. Using this pre-existing storytime video data set in this secondary data analysis allowed for maximum exploration of the topic, while limiting demands on the time and efforts of the storytime providers and the storytime participants (Szabo & Strang 1997). In addition, the use of this pre-existing data set allowed for a broader exploration of storytimes, than what would have been possible with only one researcher (Johnston 2014). While there can be disconnects between research design and secondary data sets (Heaton 2008; Szabo & Strang 1997), the researcher's intimate knowledge of the data set allowed it to fit into this study in a relatively seamless manner. This may also be because this current study is considered to be what Heaton (2008) describes as supplementary analysis, a deeper analysis of an aspect related to the original study.

As a part of the VIEWS2 study, forty libraries were randomly chosen to participate in the study, using stratified sampling, from across the state of Washington to ensure that libraries of all sizes would be represented in the study. Storytime providers from the Early Learning Public Library Partnership (ELPLP), a partnership of 30 library systems across the state of Washington that is vested in participating in the advancement of early learning, were sent a confidential invitation to participate in the research (Campana et al 2016).

The libraries that the volunteers represented were placed into three main strata: small (0–100,000 registered borrowers), medium (100,001–250,000 registered borrowers), and large (>250,001 registered borrowers), based on the registered borrowers.[2] From these strata, 13 libraries were

[2] The strata categories were derived from the Washington State Library's size classifications.

randomly chosen from the large group, 13 libraries from the medium group and 14 from the small group.

From each of the selected libraries, a storytime provider was randomly selected from the storytime providers at that library that volunteered to participate, resulting in a participant group of 13 storytime providers from large libraries, 13 storytime providers from medium libraries, and 14 libraries from small libraries. At each library, three storytimes offered by the same storytime provider were observed and video-recorded: a total of 120 storytimes offered by 40 providers.

At each VIEWS2 storytime, a video-recording was made of the storytime provider presenting the program and of the attendees participating in the program. As a result, each observation resulted in two video-recordings. Because the storytimes across Washington State were found to be so diverse, the VIEWS2 storytimes were only video-recorded for the first 30 minutes, which began with the opening song or welcome. While this encompasses most storytimes, some elements such as play time or craft time were left out. While taking the two video-recordings, the researcher also observed the storytime, taking notes of the behaviors of the children. These field notes were not used in this study. In order to minimize the observation effect on the storytime provider and the attendees, these researchers were trained in techniques for non-participant observation (Campana et al 2016).

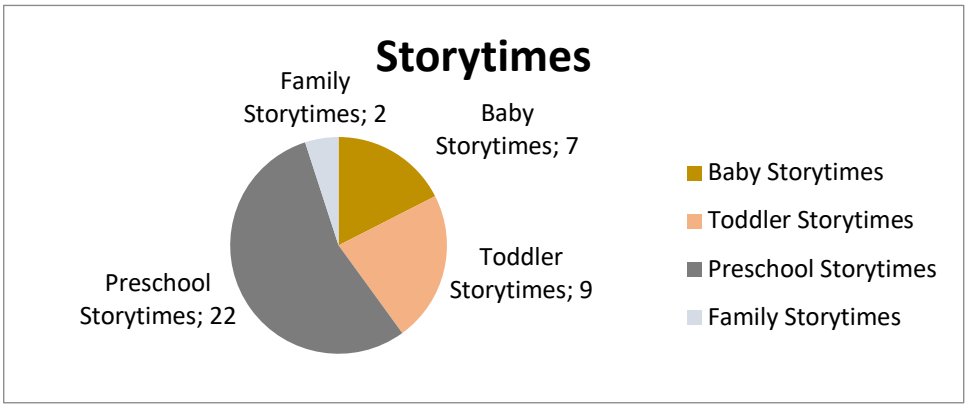
Each storytime fell into one of four categories: baby storytime (birth-18 months), toddler storytime (18-36 months), preschool storytime (36-60 months), and family storytime (0-60 months) (see Figure 2). Each observation included two video recordings – one of the storytime

provider offering the program (storytime provider video) and one of the participants (including children and parents/caregivers) attending the program (storytime participant video).[3] These observations were performed in an identical manner over two years resulting in 240 storytime observations (Campana et al 2016). Only the first year of storytime observations were included in this study.

Table 3.5: Number of library participants by size

Small Libraries (0–100,000 registered borrowers)	Medium Libraries (100,001–250,000 registered borrowers)	Large Libraries (>250,001 registered borrowers)
14	13	13

Figure 3.2: Numbers of each type of storytime



[3] For the remainder of the chapter, the video-recordings of the storytime content are referred to as the *storytime provider video* and the videos of the of the storytime participants are referred to as the *storytime participant video*

Because storytime content and children's capabilities and behaviors can vary quite drastically from age group to age group, this study focused in on one specific age –pre-school - to try and control for the more extreme variations in content and behaviors due to age and therefore allow for a deeper understanding of the object of study. The VIEWS2 preschool storytimes were chosen for this study because they represent a majority of the VIEWS2 storytime. In the VIEWS2 study, twenty-two of the forty libraries were offering preschool storytimes. Two of these libraries were excluded so the study included observations of video-recorded preschool storytimes from twenty libraries. From the three preschool storytimes video-recorded at each of the twenty libraries, one was randomly chosen for inclusion in this study.

As each VIEWS2 storytime included a video-recording of the storytime provider presenting the program and a video-recording of the attendees participating in the program, both video-recordings were utilized in the study. Observing both the storytime provider video and the storytime participant video allowed for:

1. coding the storytime provider video to uncover the various modes/information processes incorporated in storytime and nature of the information content and information resources incorporated in storytime, which helped to answer research questions 1 and 2;
2. examining the behaviors of the children and parents/caregivers in the storytime participant videos for themes that indicate the roles that they play in storytime, which helped to answer research question 3; and

3. coding the behaviors of the children observed in the storytime participant videos using the child behaviors included for all domains of development in the Head Start Early Learning Outcomes Framework, which helped to answer research question 4.

Data Collection, Coding, & Analysis

For this current study, the same broad process was used for both the storytime provider video and the storytime participant video (see Figure 2). Data were collected and coded through observations of both the storytime provider video and the storytime participant video. Comprehensive field notes were taken while observing the video-recordings. To answer each research question more thoroughly, a variety of methods were used to code each video (see Table 6 and the subsequent section for additional information).

Figure 3.3: Data Collection, Coding, and Analysis Process

Table 3.6: Data Collection and Coding Methods by Research Question

Research Question	Video	Participant Group	Observations & Field Notes	Coding Cycles
1 & 2	Storytime provider video	1. Storytime Providers	2. Field notes on storytime content 3. Field notes on storytime provider's behaviors	1. Holistic Coding 2. Subcoding

				3. Pattern Coding
3	Storytime participant video	1. Parents/ Caregivers 2. Children	2. Field notes on parents/caregivers' behaviors and actions 3. Field notes on children's behaviors and actions	1. Open Coding 2. Pattern Coding
4	Storytime participant video	1. Children	2. Field notes on children's behaviors and actions	1. Quantitative Coding

Research Questions 1 & 2

To understand the nature of the information content, information resources, and the different ways that storytime providers are communicating and sharing information with the attendees, the storytime provider videos were observed twice. During the first observation, comprehensive field notes were taken of the content of the storytime program. During the second observation comprehensive field notes were taken of the storytime provider's behaviors.

The field notes from both observations were then coded using a multi-cycle process. The original plans were to use what Saldana (2016) refers to as 'holistic coding' in the first cycle in order to "chunk" the field notes into three broader topics that corresponded to the three dimensions of an information base – information content/information resources, information processes, and roles

of the involved individuals (Eisenberg and Small 1993). However, this was found to be almost impossible due to the intertwined nature of the three dimensions in storytime. Instead, a cycle of holistic coding was used to chunk the field notes into the different elements of storytime, such as reading, singing, and leading chants/rhymes.

Once the first cycle of holistic coding was complete, a second cycle of subcoding (Saldana 2016) occurred. During the subcoding, each chunk of field notes relating to the specific storytime element was coded using an open coding approach (Strauss & Corbin, 1998). More specific codes were applied to identify: 1) the types of information content/information resources that were shared, 2) the ways that information was being shared, and 3) the roles that the storytime attendees were playing while in storytime.

This subcoding facilitated a specific analysis under the three dimensions identified in the Information-based Education framework (Eisenberg and Small, 1993). The data on the information content and information resources were coded as to the type of information content or resource and the subject matter and content that it contains and is supporting. The data on the information processes were coded as to the specific information process and how the storytime provider is communicating and sharing information with the storytime attendees. This coding provided information on the modes for communication and sharing information that storytime providers were utilizing during storytime. Finally, the prompts, questions, and requests the storytime provider made of the children and adults were coded to provide an understanding of the actions that the storytime provider wanted the children and the adults to perform, which

provided insight into the roles that the storytime provider expected the children and adults to play.

Field notes from the first five storytimes were used to develop the preliminary codes and the initial codebook. Codes were assigned, in the field notes, to relevant pieces of data under each storytime element. After assigning a new code to relevant data, a memo was written to provide detail behind the application of the code (Saldana 2016). If a previously created code was assigned to the data, the memo was updated to reflect any additional thoughts and reflections. These codes and memos from the first five storytimes were used to develop the codebook, which includes each code and coding decision rules (Saldana 2016).

After the codebook was established, the full set of field notes (the first five and the rest) were coded using the codebook. Codes were added, using the same process as above, to describe data that did not fit within the initial codes. Once all of the field notes were coded, a final cycle of pattern coding occurred, where the information from the cycle of subcoding was pulled together into a "smaller number of categories, themes, or concepts" (Saldana 2016 p. 236).

Once all of the cycles of coding were complete, the frequency of codes from the subcoding and pattern coding cycles were examined to provide insight into the more common types of information content and information resources, modes for sharing information or information processes, and expected actions of storytime attendees. In addition, the data, the codes, and the memos were used to develop a rich description of the data that provided a more comprehensive understanding of the information environment, and its multimodal nature, provided by storytime.

Research Question 3

To understand the roles that parents/caregivers and children play during storytime, the storytime participant videos were also observed. Insight into the roles that parents/caregivers and children perform during storytime was gained by looking at the actions and behaviors that they were demonstrating during storytime.

Two observations of the storytime participant videos were performed. During the first observation, field notes were taken of the parents/caregivers' actions and behaviors. During the second observation, field notes were taken of the children's actions and behaviors. While taking the field notes, the researcher was scanning the group of parents/caregivers and children, making every effort to capture the behaviors from a wide range of attendees. The field notes included any behaviors exhibited by the parents/caregivers and children (such as utterances, responses, singing, movements, interactions).

The field notes were coded using an open coding approach (Strauss and Corbin, 1998) to surface actions and behaviors that parents/caregivers and children were demonstrating during storytime. The codes and codebook were established using the same process that was used with research question 1 and 2 (the storytime provider videos). However, the process began with the open coding and did not include the cycle of holistic coding that was done with the field notes from the storytime provider video.

Once all of the cycles of coding were complete, the frequency of codes from the open coding and pattern coding cycles were examined to provide insight into the common behaviors and actions that parents/caregivers and children performed during storytime. In addition, the data, the codes, and the memos were combined with the data, codes, and memos from the storytime provider videos to develop a rich description of the data that provided a more comprehensive understanding of the roles of the individuals involved in storytime.

Research Question 4

To understand the learning behaviors that children exhibit in storytime, the field notes taken of the children for research question 3 were coded a second time to understand the types of learning occurring in storytime across multiple domains of child development. To accomplish this, the field notes were coded for behavioral events using the indicators in the SEALE tool described earlier in the chapter. The researcher went through the indicators in the SEALE tool and coded for the indicator when the behavior described in the indicator was found in the field notes taken from the observation. This observation and coding technique had been previously used successfully in libraries (Campana 2016; Feldman 2011), museums (Feldman 2010), and preschools (Feldman 2011).

Analysis

The data from the SEALE tool were analyzed across storytimes at two levels (see Table 5):

1) for the indicator level, the percentage of indicators in each goal that were observed across all storytimes; and

2) for the goal level, the percentage of storytimes, in which at least one indicator was observed, were calculated for each goal.

The information from these two analyses were examined to provide an understanding of the Head Start sub-domains and domains of child development and learning that were being exhibited in storytimes. These different analyses provided an understanding of the common types of learning behaviors that were occurring across all of the storytimes.

Table 3.7: Example of data analysis table from coding

Goal	Goal Description	Percent of storytimes in which at least 1 indicator observed	Number of storytimes in which at least 1 indicator observed	Percent of all indicators coded for all 20 storytimes
P-SE 1	Child engages in and maintains positive relationships and interactions with adults			
P-SE 2	Child engages in prosocial and cooperative behavior with adults			

P-SE 3	Child engages in and maintains positive interactions and relationships with other children			

Note: Goal information from Office of Head Start. (2015). Head Start Early Learning Outcomes Framework: Ages Birth to Five. Washington, D.C.: Administration for Children and Families. Retrieved from https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf

Phase 2: Survey

To further understand the information uncovered in the analysis of the storytime observation data, a survey was built and administered to storytime providers in Washington State following the storytime observation phase. The goals and purposes of the survey were to:

- triangulate the findings from the qualitative phase with a different data source and with a different method;
- extend the data beyond the storytime sample and storytime boundaries--of the 30-minute time limit--established by VIEWS2;
- extend the observation data to current practices in storytime; and
- gain additional insight into the storytime providers' expectations of and goals for the information environment, which cannot be understood through observations.

The benefit of the survey was that it offered the opportunity, using a different methodology, to gain a broader understanding of the patterns and practices related to the information environment

in a larger number of current storytimes (Krathwohl 2009). The survey helped to provide insight into all of the research questions.

Participants

The survey was administered to storytime providers who regularly offer storytimes for children ages 0-60 months in public libraries. The participants were recruited from Washington state, the same population from which the VIEWS2 storytime providers were recruited, by sending out email notifications through the Washington State Library and the Washington Library Association. In addition, because the survey was distributed across the state, some of the respondents were also a part of phase 1, as they participated in the VIEWS2 study.

Instrument development

The survey was administered online via the Catalyst tool at the University of Washington. Administering the survey virtually offered the benefits of a quicker response time and simpler distribution (Krathwohl 2009). Using a multiple choice and open-ended question format, the survey included questions about:

1) demographics (limited number);
2) their storytimes (descriptive questions);
3) the nature of the information content and information resources they include in their storytime content;
4) the modes they use for communicating and sharing information during the storytime;
5) their perceptions and expectations of their roles as well as the roles of the children and adults involved in their storytime; and

6) the types of learning they work to encourage as well as the types of learning behaviors they observe in the children attending their storytimes.

Given that one of the purposes of the survey was to triangulate the findings from the observations, many of the survey questions were informed by the findings from the storytime observation analysis. Some of the questions were directly based on the findings from the storytime observations, including those on nature of the information content and the information resources, modes for communicating information, and types of learning they work to encourage and have observed in their storytimes. However, additional questions were also included in an effort to gain new or different responses that did not fit the previous findings. In addition, questions that were informed by, but not based on, the previous findings were included to explore the storytime providers' expectations of and goals for the information environment, including the roles of the participants. The demographic and descriptive storytime questions were not based on the observations and were used to provide background and descriptive information on the storytime and the library in which it existed.

Data Collection & Analysis

The survey was sent out through the Washington State Library and the Washington Library Association, inviting storytime providers that offer storytimes on a regular basis to participate. Following the initial recruitment email, two email reminders were sent out through both organizations. Given that the survey was offered virtually, the responses were collected and downloaded in an electronic file for data analysis. Descriptive statistics, such as simple counts and the mean, were used to analyze the responses to the questions in the survey.

3.3 Delimitations

Delimitations are choices made by the researcher in a study that help to define boundaries for the research and "narrow the scope of the study" (Creswell 2003 P.148). This study includes four intentional delimitations.

One delimitation was the choice to use data collected as a part of VIEWS2, the first study to demonstrate the early literacy impact of storytimes in a widespread, systematic, reliable manner. This decision was made because the videos of VIEWS2 storytime observations contain a wealth of data that has yet to be explored. In addition, because it took 35 researchers over two years to perform the storytime observations, it would be impossible to recreate the wide-scale data collection without significant funding. However, the use of these of these videos limited the data collection to Washington State. In addition, because the observations were limited to a specific time frame in VIEWS2 to create a consistent data set (Campana et al 2016), the observations for the current study were limited to this constrained data set.

The second delimitation was the choice to only use the preschool storytimes. While this choice excluded storytimes offered for other ages, limiting the diversity of the data set allowed for a deeper analysis and increased comparisons.

The third delimitation was the choice to use the Information-Based Learning framework (Eisenberg & Small 1993) to explore the information environment. This choice was made because the framework offers the most comprehensive method for identifying the crucial components of an information environment (see Chapter 2 for discussion of alternative methods)

for young children as described by learning theorists: the information resources, information processes, and engaged adults. However, other components not identified in the framework may also contribute to creating an information environment.

The fourth delimitation was the use of the Head Start Early Learning Outcomes Framework (Office of Head Start 2015) to code the children's behaviors at storytime. The choice to use the Head Start Early Learning Outcomes Framework (Office of Head Start 2015) was made because it is a national level framework that provides learning behaviors across multiple domains of child development. However, the use of this framework constrained the definition of various types of learning to the behaviors described in the framework.

3.4 Research Quality

Trustworthiness (Lincoln and Guba 1985), quality, credibility (Patton 2002), and validity (Creswell 2014) are among the many terms used to refer to research quality in qualitative studies. Ensuring research quality in qualitative research is important because qualitative research is an interpretive process where researchers and their interpretations play a significant role. Because researchers' interpretations can be influenced by their background and biases, using methods to ensure research quality can help to control for the impact of these influences (Creswell 2014). While different methodologists suggest a variety of methods to use for ensuring research quality, many of the methods they recommend are similar.

Lincoln and Guba (1985) offer five techniques for establishing research quality: 1) using prolonged engagement, persistent observation, and triangulation activities to make it more likely that trustworthy findings are uncovered; 2) peer debriefing; 3) examining negative cases; 4)

testing tentative findings against a selection of data; and 5) checking the accuracy of the findings with participants. Creswell (2014) adds two techniques—using a rich, thick description and clarifying the researcher bias--to Lincoln and Guba's recommendations. Patton (2002) adds another two techniques for establishing research quality: generating and assessing rival conclusions and keeping methods and data in context.

The study utilized several of the methods listed above to ensure research quality. Prolonged engagement, persistent observation, and triangulation of data sources--the three activities, offered by Lincoln and Guba, that make it more likely that trustworthy findings will be uncovered--were present in this study. In VIEWS2, the source of the storytime observation videos, as a research project lead, the researcher had prolonged engagement with the participants and the storytimes over a three-year period. In addition, during the three-year period the researcher engaged in persistent observation by observing over 40 storytimes. While these activities occurred in the previous research study, the credibility of the data set remains the same and the researcher's experience with the data set and participants has only increased. Triangulation of data sources (Patton 2002; Lincoln and Guba 1985) was accomplished by administering the survey to confirm and build on the findings from the storytime observations. Finally, peer debriefing and a small test of coding reliability was done with another researcher who also participated in the VIEWS2 study and as a result is intimately familiar with the data set and the object of study. Coding reliability was established by having this colleague use the codebooks to code two randomly selected storytime observations (see Table 8).

Table 3.8: Intercoder Reliability Results

Code system	Pearson's r	Cohen's kappa
Storytime provider	.72	.71
Children	.78	.72
Caregiver	.72	.72

Note: The reliability scores reported represent the average of the reliability scores across the two storytimes.

For the survey, the same methods, as explained above for the observations, were used to establish credibility and reliability. However, because the survey is a different method (from observations) where an instrument is developed and administered to a sample, the credibility of the survey instrument and data needs to be established through additional means. In addition to using triangulation, member checks, and peer debriefing, the credibility of the survey and its data were established by 1) consulting with storytime providers on the survey questions; 2) pilot testing the survey with a group of storytime providers; and 3) controlling for survey nonrespondents through multiple email reminders to complete the survey (Krathwohl 2009).

3.5 Human Subjects Considerations

The VIEWS2 videos, both the storytime participant videos and storytime provider videos are currently covered under an IRB at the University of Washington. The storytime providers gave their consent to have the data used in future studies when they signed the consent form that states "the researchers may decide to use the data in a future study if the data is relevant to the future study". While the children in the study fell under a waiver of signed consent, their parents/caregivers were provided with an information sheet, which stated, "the researchers may decide to use the data in a future study if the data is relevant to the future study" and were also given the opportunity to sit off camera if they did not give their consent to be videotaped.

Because the researcher had played an integral role in Project VIEWS2, she was approved for full access to the VIEWS2 data. Regardless of the fact that the use of these videos is covered under the current IRB, the Human Subjects Department was contacted to ensure and fulfill any additional actions that needed to be completed for this specific use of these videos to comply with any human subjects regulations. In addition, the researcher worked to gain approval from the Human Subjects Division for the survey phase of the research. The survey phase was considered exempt.

3.6 Conclusion

This study worked to elucidate the nature of the information environment provided by storytimes at the public library, provide detail on the multimodal aspects of the information environment, and determine the various types of learning occurring for children attending storytime. This was accomplished through a mixed methods design that incorporated storytime observations of the content of the program and behavior of the attendees, followed by a subsequent survey that extended the findings from the storytime observations to a wider sample of storytime providers. The findings from the survey were also used to gain additional insight into the storytime providers' expectations of and goals for the information environment.

Ultimately, the storytime observations and the survey helped extend an understanding of:

- the nature of the information content and information resources included in the storytime program;
- the ways that storytime providers communicate and share information during their storytime program;

- the roles that the storytime providers, children, and parents/caregivers perform while attending storytime; and
- the types of learning behaviors the children exhibiting while attending storytime.

These findings offer contributions for theory, practice, and methodology but most importantly they provide a greater understanding of the information environment that storytime providers are designing for the attendees as well as a greater understanding of the learning outcomes for children that are occurring while interacting in the information environment.

Chapter 4: Results

In order to be prepared for school and lifelong learning, young children need to be exposed to information-rich environments that incorporate essential components such as information resources, information processes and engaged adults. Gaining an understanding of the information aspects of the environments in which young children exist should provide an understanding of how those environments help support learning for young children. This study endeavored to examine the information environment of public library storytime to understand the learning opportunies that storytime offers for young children.

In order to accomplish this, the study strove to answer the overall research question:
How do individuals and information interact to create learning experiences for young children in storytime?

The specific research questions were:

1) What are the nature of the information content and information resources used in storytime?
2) How do storytime providers communicate and share information with the children and adults attending storytimes?
3) What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?
4) What types of learning behaviors are the children exhibiting while attending storytime?

Reesarch questions 1, 2, and 3 were based on the three dimensions of an information base for learning--information resources, information processes, and the roles of the people involved--as

identified by Eisenberg and Small in their framework of Information-based Education (Eisenberg and Small, 1993). This project incorporated storytime observations of twenty storytimes in Washington state and a survey of storytime providers in Washington state to answer all four research questions.

The results from both the storytime observations and survey are presented in this chapter and are organized around the four specific research questions. Section 4.1 provides demographic information for 1) the observation participants, including the storytime providers, the libraries, and the children and adults who attended, and 2) the storytime providers who participated in the survey and the libraries in which they work. Section 4.2 provides an introduction to some of the terminology in the chapter. Section 4.3 adresses the information content and resources incorporated in storytimes. Section 4.4 addresses the ways in which storytime providers communicate and share informaiton with the children and adults attending storytime. Section 4.5 addressed the roles that the storytime provider, children, and adults perform while attendding storytime. Section 4.6 addresses the types of learning behaviors that children are exhibiting while attending storytime.

4.1 Demographics

The study included two sets of participants across the two phases.

4.1.1 Phase 1: Storytime Observations

Phase 1 included observations of twenty public library storytimes offered for children, ages 36-60 months, and their caregivers. These observations included twenty storytime providers and the

children and adults who attended those storytimes. A survey of the storytime providers, completed as part of the VIEWS2 study, revealed the following characteristics of the storytime providers and their libraries.

Storytime Providers and The Libraries

Fifteen of the storytime providers participating in the observation had received a master's degree. Of the remaining five storytime providers, four had received a bachelor's degree and one had received a high school diploma (see table 4.1).

Degree	Number of Storytime Providers
Master's	15
Bachelor's	4
High School	1

Table 4.1: Education of storytime providers in observations

Seventeen of the twenty storytime providers also reported having taken some classes on library services for children while earning their degree. In addition, fourteen storytime providers shared that they had participated in the Every Child Ready to Read training, a public library early literacy training program.

Training	Number of Storytime Providers
College classes on library services for children	17
Every Child Ready to Read	14

Table 4.2: Training of storytime providers in observations

The libraries and library systems in which the storytime providers worked and offered storytimes were spread relatively evenly across three size strata (see table 4.3).

Strata (registered borrowers)	Number of libraries
Small (0-100,000)	7
Medium (100,001-250,000)	6
Large (Greater than 250,001)	7

Table 4.3: Library sizes categories in observations

Children and Adults Attending the Storytime

As part of VIEWS2, no identifying information was collected for the children and adults attending the storytime. As a result, all that can be reported here are the numbers of children and adult attendees. However, a rough age estimation, based on child development principles, was made for the child participants to determine if they fit into the target age of 36-60 months. Because of this, the data presented here reports on the number of children attending, both estimated to be within the target age range and outside of the target age range. Based on the number of children within the target age range attending the storytime, the storytimes were classified into three categories: small (0-10 children), medium (11-20 children), and large (over 20 children). See table 4.4 for numbers of storytimes in each category.

Category	Number of storytimes
Small (0-10)	7
Medium (11-20)	9
Large (more than 20)	4

Table 4.4: Number of storytimes in observations by participant size

The average number of child participants for the twenty storytimes was 15 and the median number of participants was 14. However, there were two outliers: one with a high number of participants and one with an extremely low number of participants. Excluding these two from the calculation of the mean gives an adjusted average of 14 children participants.

The numbers of children attending the storytime who fell outside of 36 to 60 months of age ranged from 0 to 7, with an average and a median of 2 participants outside of the target 36 to 60-month age range. The numbers of caregivers attending the storytimes ranged from 2 to 16 caregivers, with an average of 9 caregivers attending the storytimes and a median of 8 caregivers attending the storytimes.

4.1.2 Phase 2: Survey

Phase 2 included a survey of storytime providers from across Washington State. The survey had 68 respondents. The survey revealed the following characteristics of the storytime providers who responded to the survey, their libraries, and their storytimes.

Storytime Providers

The responses from the survey indicated that survey participants represent a wide range of experiences. Forty-two respondents indicated they held a master's degree, with thirty-seven of those holding a Master's in Library and Information Science. Sixteen respondents reported having a bachelor's degree and three reported having a high school degree. Finally, seven respondents selected the Other option, adding that they were in the process of working on various degrees.

Degree	Number of Respondants
Master's in Library and Information Science	37
Other Master's Degree	5
Bachelor's	16
High School	3
Other	7

Table 4.5: Education of storytime providers represented in survey

The storytime providers reported participating in a variety of trainings related to storytime, with most respondents reporting participation in multiple trainings. The two most prevalent were library-specific training, with 45 responses, and Supercharged Storytimes, with 40 responses (see Table 4.6). In addition, sixteen respondents reported participating in the VIEWS2 study.

Training	Number of Responses
Every Child Ready to Read 1	27
Every Child Ready to Read 2	24
Supercharged Storytimes	40
Mother Goose on the Loose	6
Library-specific training	45
none	2

Table 4.6: Training of storytime providers represented in survey

The Libraries

The storytime providers who responded to the survey also represented a wide variety of libraries in terms of size of service population (table 4.7) and location (table 4.8). Thirty-one respondents reported the service population as less than 24,999. Twenty-two reported a service population in

the range of 25,000 to 99,999. Thirteen reported a service population in the range of 100,000-499,999 and two reported having a service population of over 500,000. In terms of library location, twenty-one reported an urban location, fifteen reported a suburban location, and twenty-eight reported a rural location. Four respondents selected Other, indicating that the library was in an area that crossed location types (ex. having suburban and rural areas).

Service Population	Number of Responses
<24,999	31
25,000-99,999	22
100,000-499,999	13
500,000+	2

Table 4.7: Libraries represented in survey by service population

Location Type	Number of Responses
Urban	21
Suburban	15
Rural	28
Other	4

Table 4.8: Libraries represented in survey by location type

The Storytimes

The survey asked the storytime providers to identify one storytime for which they would answer the storytime-related questions. Because of this they were asked a few demographic questions about their storytime. The tables below provide information on the types of storytimes represented in the survey.

Targeted Age of Storytime	Number of Responses
Birth to 18 months	3
18 to 36 months	11
36 to 60 months	26
Family	17
other	11

Table 4.9: Number of storytimes represented in survey by target age

Average Number of Attendees	Number of Responses
0-10	16
10-20	32
20-30	13
30-50	7

Table 4.10: Number of storytimes represented in survey by average number of attendees

4.2 Defining the Terminology

In order to explore the information environment and characterize the various aspects of storytimes, terminology is utilized in this chapter to refer to different aspects of the information environment and of storytime. To alleviate confusion and develop a shared understanding of this terminology, definitions of key terminology are provided below.

Storytime Content – all of the content in storytime, including all of the storytime elements

Storytime Elements – the common components of which storytime is comprised (i.e. reading, singing, saying rhymes, etc.)

Storytime Add-on Elements – extra components that are typically added on the beginning or end of storytime to extend the experience (i.e. playtime, craft time, etc.)

Information Resources - an item (tangible and intangible) that was created outside of storytime and used, by the storytime provider, in storytime. This includes physical items like books or puppets and intangible items such as songs or rhymes.

Information Content – content, communicated by the storytime provider to the children and adults, that the storytime provider emphasizes and sometimes extends by adding their own knowledge

Information Transfer – the process of communicating information from the storytime provider to the storytime participants

Information Interaction – the process of communicating information to the child and providing opportunities for them to interact with the information

Roles – the common actions that storytime attendees are performing while attending in storytime

4.3 What is the nature of the information content and information resources used in storytime?

Research question 1 examines the information resources and the information content incorporated in storytime. Information resources are identified by Eisenberg and Small as the first dimension in the information base (1993). The storytime observations and survey were used to gain an understanding of the information resources and information content provided in storytime.

4.3.1 Phase 1: Storytime Observations

The storytime observations provided insight into the information resources and information content included in storytime.

Information Resources

During the storytime observations it became apparent that storytime is comprised of several common broad elements (see section 4.3 for more information). The elements and definitions of them are included below:

- Reading/storytelling – period of time where storytime provider reads a book or shares an oral story
- Singing – period of time where storytime provider sings and often invites the children to sing with them. This can include songs and books that are sung.
- Saying chants/rhymes – period of time where storytime provider leads the group in saying a chant or rhyme
- Activities – period of time where storytime provider leads the children in a game or play- or movement-based activity
- Introductory talk – period of time when the storytime provider is talking to the children welcoming them to storytime
- Theme talk - period of time when the storytime provider introduces the theme of the storytime
- Craft talk - period of time when the storytime provider introduces the craft to the children
- Caregiver tip talk - period of time when the storytime provider is talking to the caregivers to give them tips around learning and development

Within these elements storytime providers are incorporating a wide variety of information resources. In addition to books, the most prevalent information resource is actually the storytime

provider. As they are using other information resources, they often pull on their own knowledge to call on and highlight information content related to the information resource. An example of this can be seen when a storytime provider asks the children if they know what a word in a book means and then goes on to define it for them when they say no. In this way the storytime provider is pulling on their own knowledge to define the word.

Other information resources included in storytime that were uncovered in the observation can be seen in Table 4.11. Some of these information resources in the table below are commonly understood, but others are not. For those that are not commonly understood, a description and an example is provided below the table.

Storytime Element	Information Resource	Percentage of Storytimes	Number of Storytimes
Reading/Storytelling (n=20)	Storytime Provider	100%	20
	Books	100%	20
	Oral Story	45%	9
	Flannel/white board	35%	7
	Props	25%	5
	Puppets	5%	1
Singing (n=19)	Storytime Provider	100%	19
	Songs	100%	19
	Flannel/white board	26%	5
	Puppets	16%	3
	Music	11%	2
	Books	11%	2
	Props	5%	1
	Images	5%	1

Saying Chants/Rhymes (n=14)	Storytime Provider	100%	14
	Chant/Rhyme	100%	14
	Flannel/white board	14%	2
	Props	7%	1
Talk (introductory talk, theme talk, craft talk, caregiver tip talk) (n=18)	Storytime Provider	100%	18
	Puppet	17%	3
	Props	6%	1
Activity (n=17)	Storytime Provider	100%	17
	Music	41%	7
	Manipulatives	35%	6
	Flannel/white board	18%	3
	Props	18%	3
	Puppets	12%	2
	Images	12%	2

Table 4.11: Information resources included in each storytime element

Props:

A prop was considered to be an item, other than a puppet, used by the storytime provider to bring a concept or story to life.

An example of a storytime provider using a prop is: *The storytime provider turns to the children and says, "here comes the lady with the alligator purse." She picks up a purse. "This purse is the perfect alligator purse. Let's read the lady with the alligator purse." She picks up the book and carries it over and sits down. She puts the purse in her lap, opens the book, and says, "the lady with the alligator purse. You guys know this song." She starts singing the words in the book. She shakes her head when singing "it wouldn't go down his throat." She picks up the purse and shows it when the singing about the lady with the alligator purse. When she sings*

about the lady with the alligator purse leaving, the storytime provider picks up the purse and walks off.

Music

The music code was used when the storytime provider used music that wasn't sung to. This often occurred when they turned on music for the children to dance to.

An example of a storytime provider using music is: *The storytime provider says, "for this first song you need to find a partner or a friend. She starts the music and stands up. The song has lyrics that talk about shaking a friend's hand, so the storytime provider acts out shaking a hand and then walks around shaking hands with all of the children. Then the song lyrics say to give a high five to a friend and she walks around giving high fives to the children. She warns them, "this next one is kind of tough." Song lyrics say to bump a friend's hip and she acts out bumping a hip and then bumps hips with the children. When the song prompts them to put their "hands in the air" She puts her hands in the air and waves them back and forth.*

Manipulatives:

Manipulatives were defined as items, such as shakers or scarves, that the children used to complement their actions in songs, rhymes, or activities.

An example of children using a manipulative is: *The children are getting little beanbags while she is turning on the music. When the music prompts, the children start throwing the beanbags in the air. Then when the song lyrics say to turn around and jump, jump, jump, the children start*

turning around and jumping. When the song lyrics prompt them to put the beanbag on their head and walk around the room, the children do it.

The data in table 4.11 demonstrate that storytime providers are using a wide variety of information resources to enhance their storytime elements. Some of the elements such as reading and singing invite the use of information resources more than others but that may be due to the structure of the element, such as how reading is predominantly structured around the book or the oral story. The prevalence of oral stories was a bit higher than expected with oral stories occurring in just under half of the storytimes. This is could be an area of exploration in the future to understand their motivations and perceived benefits behind incorporating oral stories. In addition, the frequency of information resources that provide visual aspects was unexpected. Out of the eleven different types of information resources used in storytimes, six of the different types help to provide visual aspects of information.

Summary of Within a Storytime

The storytime observations revealed that storytime providers are incorporating a variety of information resources in their storytimes. Of the information resources detailed above, the numbers of information resources included in single storytimes ranged from the lowest of 3 in one storytime to the highest of 10 in another storytime. Overall, there was an average of 5.4 information resources included per storytime for the 20 storytimes.

Information Content

The observations also revealed a significant amount of information content across multiple domains of learning and development. For the observations, things were coded as information content when the storytime provider did one of the following:

a) called attention to something specific in the information resource
b) highlighted something specific in the information resource and used their own knowledge to extend the material in the information resource
c) used their own knowledge to share information content unrelated to an information resource.

As illustrated in the tables below, the information content focused on various concepts within each of the learning domains.

Literacy:

Information Content Type	Percentage of Storytimes	Number of Storytimes
Comprehension	100%	20
Background Knowledge	85%	17
Print Awareness/Conventions	45%	9
Vocabulary	45%	9
Letter Knowledge	40%	8
Phonological Awareness	40%	8

Table 4.12: Literacy information content uncovered in observations

These data demonstrate that early literacy content is occurring in storytimes. In addition, because of the definition of information content that was adopted for the storytime observations, these

numbers do not include rhyming songs and fingerplays, opportunities for language exposure and use, and others, which would help to increase these numbers if considered.

An example from a storytime of vocabulary-related information content: *The storytime provider starts a movement activity with the children while they are waiting for everyone to come in. She starts wiggling her lower arms. "I'm glad some adults are getting involved. Everyone can use some hand wiggling, can't they?" She starts to wave her arms around. "Let's do our whole arms, gracefully. Do you know what gracefully means? Very beautifully. Let's go back to one finger" and she wiggles both pointer fingers. "Awesome, so I have some announcements for the adults today before we start. Next week instead of storytime, because it is spring break, we are having a puppet show instead. It will be a marionette puppet show." She looks at the children and asks, "do you know what that means?" The children don't answer; they just look at her. She says "it means puppets on strings."*

Math:

Information Content Type	Percentage of Storytimes	Number of Storytimes
1 to 1 correspondence	90%	18
Counting	90%	18
Direction/Positioning	75%	15
Size/Measurement	45%	9
Shapes	35%	7
Sequencing	30%	6
Numbers	30%	6
Addition/Subtraction	25%	5
Weight	20%	4
Estimation	15%	3

Alike and different	10%	2
Patterns	10%	2
Time	5%	1
Opposites	5%	1

Table 4.13: Math information content uncovered in observations

The data from the storytime observations revealed that storytime providers are incorporating a significant amount of math content into their storytimes. The most widely incorporated content was counting and 1 to 1 correspondence, which is where children understand that each number word stands for a certain quantity of items. In addition, directional and positioning concepts were observed in a large number of storytimes.

An example from a storytime of information content related to counting, 1 to 1 correspondence, and subtraction is: *Storytime provider reads from the book "and was it your elephant who ate the cupcakes, Grandma asked? Yes, I replied." The storytime provider then points to the picture and says "look at that sneaky elephant. How many cupcakes do we have? Should we count? Let's see." She points to each cupcake and counts it as the children count with her. She then says, "we have five cupcakes, but shortly we are only going to have how many when the elephant eats that one?" A child says four. The storytime provider nods and says "we are going to have four cupcakes."*

Science:

Information Content Type	Percentage of Storytimes	Number of Storytimes
Animals	85%	17
Human Body	80%	16

Speed	25%	5
Sound	20%	4
Nature	20%	4
Plants	20%	4
Weather	15%	3

4.14: Science information content uncovered in observations

The data from the storytime observations revealed that storytime providers are incorporating science content into their storytimes. The most widely incorporated content was on animals and the human body. The significant amount of animal content was due to the large number of stories containing animals, and the human body content was due to the large number of songs and chants that include content on the human body.

An example from a storytime of animal-related information content: *The storytime provider leans down and asks, "Who did I bring to storytime?" She reaches down and pulls a stuffed penguin out of her bag. Children respond, "a penguin." She replies, "A penguin and this is actually a daddy penguin because daddy penguins are actually very good daddies and they sit on the egg to keep it warm while mommy goes way far away to get something to eat and then she comes back and by time she comes back the egg has hatched. And then there is a little baby chick." She bends down and looks in her bag. "Do I have a little baby friend in here? Yes, I do." She pulls out a little penguin finger puppet and puts it on her finger and says "there's the little baby chick. And the baby chick sits right between Daddy's toes." She puts the baby penguin puppet between the feet of the big penguin stuffed animal and then says, "And mom penguin comes back and they have a little chick and they can take turns taking care of the little baby."*

Social/Emotional:

Information Content Type	Percentage of Storytimes	Number of Storytimes
Emotions	50%	10
Social Information	40%	8

Table 4.15: Social and emotional information content uncovered in observations

There was not as much information content on social and emotional concepts as there was for the domains of literacy, math, and science but it still appeared in roughly half of the storytimes.

An example from a storytime of emotion-related information content: *The storytime provider turns the page in the book, points to a fish, and says "this one's a happy fish. Can you show me a great big smile?" She smiles big and points to her mouth. She then points to the next fish and says "and this one's a grumpy fish. Can you show me a grumpy face?" She uses a grumpy voice and makes a grumpy face when she is talking about the grumpy fish.*

Cultural:

Information Content Type	Percentage of Storytimes	Number of Storytimes
Other cultures	25%	5
Sign language	5%	1

Table 4.16: Cultural information content uncovered in observations

There was limited information on other cultures found in storytime. Most of it was limited to a couple of storytime providers incorporating foreign language words into their storytime. However, there were a few instances of cultural information content incorporated into storytimes.

An example from a storytime of information content related to other cultures and foreign language is: *The storytime provider says, "our first word today is this one", and points to the white board where it is written. "It says hola. Can you say that with me?" She turns to the children and asks "does anyone know what hola means?" A child says "hello." She points to him and says, "exactly! So, when you say hola, can you make your hand wave?" She waves her hand while saying it. Then she says "hola," waves her hand again, and continues with, "did you know that people wave all over the world? They may say hello in different ways but almost all of them wave their hands. Did you know that?" She waves while she is telling them that. "So, if you wanted to go somewhere and you didn't talk the way they talk, you could just wave at them [she starts waving] and they would know that you were saying hello. So today we are going to say hola [she waves while saying it]. Can you say hola to everyone around the room?"*

Information about the World:

Information Content Type	Percentage of Storytimes	Number of Storytimes
Colors	70%	14
Food	25%	5
Buildings	20%	4
Daily Routines	15%	3
Art	10%	2
Tools	5%	1
Families	5%	1

Table 4.17: Information content about the world uncovered in observations

There was a lot of information content spread over various subjects that can be classified as information about the world. This varied information content is important as it allows children to

learn different things about the world in which they live. The most predominant topic in this category was information on colors and learning to identify them. There was also information content that is important to children's everyday lives such as food and daily routines.

An example from a storytime of information content related to food is: *The storytime provider points at the next page of the book and reads "then the tenth rabbit remembered that he had ten black peppercorns." She looks at the children and asks, "do you know what peppercorns are? They are what you grind up to make pepper, that makes you sneeze. These are peppercorns. Let's count them." She points at each one in the picture and counts them.*

Information about Library:

Information Content Type	Percentage of Storytimes	Number of Storytimes
Storytime Rules and Routines	85%	17
Information about library programs	30%	6

Table 4.18: Library-related information content uncovered in observations

The storytime providers also shared lots of information on the rules and routines of storytime and information about library programs.

An example from a storytime of information content related to storytime rules and routines is: *The storytime provider says, "if you want a stamp you have to sit down." She pulls something out of the box and says, "put your hand on your head". She puts her hand on her head to model it. She then repeats, "put your hand on your head." The child in front of her puts both hands on*

his head. The storytime provider says, "let's give everybody one first and then we will do both if we have time. Everybody want a stamp? My stamp is an animal that says squeak, squeak. And it likes cheese." As she walks around she says to one child, "can you put your hand on your head?", and points to the child's head. She walks around putting stamps on the children's hands. To one child she says, "if you want another stamp you have to sit on your bottom. Can you sit on your bottom?"

Summary of Within a Storytime

The storytime observations revealed that storytime providers are incorporating a wide variety of information content in their storytimes. Of the information content areas detailed above, the numbers of information content areas included in single storytimes ranged from 6 in one storytime to 22 in another storytime. Overall, there was an average of 13.05 different information content types included per storytime for the 20 storytimes.

4.3.2 Phase 2: Survey of Storytime Providers

The survey was used to gain an understanding of what types of information resources and information content storytime providers are using in their current practice. In the survey they were asked to think about the last two storytimes they offered and select the types of information resources and information content they used. The multiple-choice answers were developed from the data that was collected during the observations and from feedback provided by storytime providers who pilot tested the survey. In addition, the question included an Other option where they could fill in any information resources or information content that was not on the list.

Information Resources

Overall, the survey revealed that storytime providers used a wide variety of information resources in the two most recent storytimes they offered (see Table 4.19). In addition, there were 13 responses to the Other option. These responses included some of the following information resources: sensory table, alphabet box, alphabet cards, letter and number charts, and playdough, puzzles, and building activities.

Information Resource	Percentage of responses	Number of responses
Books	96%	65
Flannel board	75%	51
Manipulatives	65%	44
Props	50%	34
Puppets	47%	32
Images (other than those in books)	44%	30
Instruments	44%	30
White board	24%	16
Technology	13%	9
Visual Schedule	6%	4

Table 4.19: Information resources uncovered in the survey

Of the information resources reported in the survey, books were the highest, which is to be expected given the nature and structure of storytime. The next two most reported information resources were flannel boards and manipulatives. The high percentage of flannel board responses may be due to their flexibility and wide applicability as a resource. The observations revealed that storytime providers used them to support four out of the five main elements of storytime. The manipulatives are often used to support music and movement activities, so their popularity

may be linked to the high percentage of songs and movement activities incorporated in storytime (see section 4.4). Otherwise, there is no clear explanation for the popularity of these two information resources. It may just be that these have become established modes of communication, shaped, spread, and entrenched through patterns of use throughout the broader storytime community (Jewitt 2008).

The survey included an option for technology as an information resource, even though it was not observed in the observations, and nine storytime providers reported using technology tools in the two most recent storytimes they offered. Because technology in library programs has been a more recent development (Mills et al, 2015), additional questions were included to delve a bit further into possible uses of technology in storytimes. Four storytime providers reported using technology in every storytime and eighteen storytime providers reported using it in some storytimes. Forty-six storytime providers reported that they did not use technology in their storytimes. This may be due to the fact that there is still quite a bit of controversy around the use of technology with young children, and library staff are still trying to understand the ways in which it can be effectively used in programming with young children. Given that the Association for Library Services for Children has placed an emphasis on media mentorship (Koester, Haines, Stoltz, & Campbell, 2015) and the American Academy of Pediatrics has recently revised their guidelines (AAP, 2016), the use of technology in storytimes will probably increase in the future.

When asked about the types of technology incorporated, a majority of responses were MP3 players and various types of tablets. When asked what they use the technology for, fifteen storytime providers reported using it for music, specifically for background music, for children

to dance or move with, or for children to sing along with. One storytime provider reported using it to project song or rhyme lyrics and actions so participants could easily follow along. Three reported using technology in storytimes to introduce early learning apps to families, and two storytime providers reported using technology to "illustrate concepts that young children may not yet have experience with, such as the sounds of whales for a storytime about whales, or video of snow falling during a winter storytime, or what fireflies in the night look like after sharing a story about bugs/fireflies."

Information Content

To uncover the information content that storytime providers are incorporating in their storytimes, the survey included questions that covered information content across literacy content, math content, science content, and an other content category. In addition, the survey also asked about the types of skills that they try to encourage, because many of the things that children need to learn for school and lifelong learning are skill-based, such as writing, narrative skills, and social skills.

Literacy Content

In the survey the storytime providers were asked to choose the types of literacy concepts they typically incorporate into storytime. The eight answer categories were derived from the observations and included an option to indicate that they don't include literacy content and an option to fill in other literacy content they might incorporate. Overall, the storytime providers are incorporating a variety of literacy content, with an average of 3.49 responses selected. None of the storytime providers indicated that they did not incorporate literacy content. Nine storytime providers indicated that they include other literacy content beyond the options offered. These

additional content areas include: tactile components that support early literacy skills for non-visual readers; basic sequencing of the beginning, middle and end of stories; writing; concept of narrative; and oral communication. In addition to supporting traditional literacy skills, some of these additional content areas also begin to support information literacy, which is significant given the importance of information literacy skills in our society.

Information Content Area	Percentage (number) of responses	Number of responses
Vocabulary	96%	65
Letter Knowledge	84%	57
Phonological Awareness	79%	54
Print Concepts	78%	53
Comprehension	69%	47
Background Knowledge	68%	46
Other Literacy Concepts	13%	9
None	0%	0

Table 4.20: Literacy information content uncovered in the survey

Math Content

The storytime providers were also asked to choose the types of math content they typically incorporate into storytime. The ten answer categories were derived from the observations and included an option to indicate that they don't include math content and an option to fill in other math content they might incorporate. Overall, the storytime providers are incorporating a wide variety of math content, with an average of 4.37 responses selected. One of the storytime providers indicated that they did not incorporate math content. Four storytime providers

indicated that they include other math content beyond the options offered. These additional content areas included: opposites (ex. big/small, short/tall), comparisons, matching, and sorting.

Information Content Area	Percentage of responses	Number of responses
Counting	96%	65
Shapes	81%	55
Number Identification	77%	52
Size/Measurement	56%	38
Patterns	53%	36
1 to 1 correspondence	50%	34
Addition	41%	28
Subtraction	41%	28
Other Math Concepts	6%	4
None	2%	1

Table 4.21: Math information content uncovered in the survey

Science Content

The storytime providers were also asked to choose the types of science content they typically incorporate into storytime. The seven answer categories were derived from the observations and included an option to indicate that they don't include science content and an option to fill in other science content they might incorporate. The categories derived from the observations mostly covered topics or subjects because those were the things that were identifiable during the observations. Overall, the storytime providers are incorporating a variety of science content, with an average of 2.99 responses selected. Four of the storytime providers indicated that they did not incorporate science content. Seven storytime providers indicated that they include other science content beyond the options offered. In addition to identifying other topics, the storytime

providers also identified some concepts, or an idea that is broader than any specific topic area, that they include. The additional content included: cause and effect, gravity, friction, physics, colors, sound, and light.

Information Content Area	Percentage of responses	Number of responses
Animals	91%	62
Nature	81%	55
Weather	75%	51
Human Body	74%	50
Space	44%	30
Other Science Content	1%	7
None	6%	4

Table 4.22: Science information content uncovered in the survey

Other Content

While the observations uncovered information content over a variety of topics, these topics were condensed in order the keep the survey a manageable length. These topics were condensed into an Other Content category which included: cultural information, foreign language, social/emotional, and storytime and library rules and routines. The six answer categories were derived from the observations and also included an option to indicate that they don't include any other content and an option to fill in other content they might incorporate. Overall, the storytime providers indicated that they are including some of the content in this Other category, with an average 2.65 responses selected. One storytime provider indicated that they do not include any of the content in this Other category and four indicated they include other content that might fit

within this category. These include: sign language; diversity of people, families, and experiences; and self-acceptance, kindness, and empathy.

Information Content Area	Percentage of responses	Percentage of responses
Social/Emotional	88%	60
Other cultures/countries	59%	40
Storytime and Library Rules and Routines	53%	36
Foreign Language	43%	29
Additional Other Content	6%	4
None	2%	1

Table 4.22: Other information content uncovered in the survey

Skills

In addition to information content, the survey also asked about the types of skills that storytime providers are trying to encourage, because sometimes learning for young children is skills-based and as a result the storytime provider may be using their storytime to encourage skills-based learning. Storytime providers reported trying to encourage a wide variety of skills in their storytimes (see Table 4.23), with an average of 4.71 responses selected. The eleven answer categories covered a variety of skills that are frequently encouraged in early childhood, as well as an option to indicate that they don't include any of these skills and an option to fill in other skills they might work to encourage in their storytimes. None of the storytime providers indicated that they did not include any of the skills and three storytime providers indicated that they incorporate additional skills. These include: sensory skills and observation skills.

Type of Skill	Percentage of responses	Number of responses

Gross Motor Skills	93%	63
Social Skills	88%	60
Fine Motor Skills	87%	59
Oral Language Skills	79%	54
Narrative Skills	69%	47
Executive Function and Self-Regulation Skills	65%	44
Writing Skills	50%	34
Decoding Skills	44%	30
Digital Literacy Skills	7%	5
Other Skills	4%	3
None	0%	0

Table 4.23: Types of skills storytime providers try to encourage in their storytimes

4.3.3 Putting the observations and survey together

When looking at the data from the observations and the survey together many of the categories are in alignment across the two methodologies.

Information Resources

For the information resources, most of the data from the survey aligns with the data from the observations. However, there are some larger differences in the data between the observations and survey with manipulatives and images (other than those used in a book). With manipulatives, the survey responses were significantly higher than the observations. This difference may be due to a more recent increased focus on movement in storytime because the manipulatives often accompany movement activities. It also may be due to a different interpretation of the term manipulatives than what was used in the observation. The amount of survey responses was also significantly higher than the observations for the inclusion of images, other than those in a book,

in storytime. This difference is probably due to not enough clarity around the definition of images in the survey instrument.

Information Resource	Observations - percentage of storytimes	Survey - percentage of responses
Books	100%	96%
Flannel board	60%	75%
Manipulatives	35%	65%
Props	45%	50%
Puppets	35%	47%
Images (other than those in books)	15%	44%
Instruments	NA	44%
White board	NA	24%
Technology	NA	13%
Visual Schedule	NA	6%

Table 4.24: Information resources uncovered across the observations and the survey

Information Content

For the information content, some the data from the survey aligns with the data from the observations across the four content areas identified in the survey: literacy, math, science, and other.

Literacy Content

For the literacy content there were several differences in the data between the observations and survey. These differences are probably due to two different factors. First, 59% of the storytime providers who responded to the survey reported participating in the Supercharged Storytimes training, which is a training that occurred in the period of time between the observations and the

survey. The Supercharged Storytimes training is based on the VIEWS2 intervention and provides information on being more intentional with early literacy skills in storytime. Second, the nature of the coding structure may have contributed to differences when being compared with a self-report measure.

Information Content Area	Observations - percentage of storytimes	Survey - percentage of responses
Vocabulary	45%	96%
Letter Knowledge	40%	84%
Phonological Awareness	40%	79%
Print Concepts	45%	78%
Comprehension	100%	69%
Background Knowledge	85%	68%
Other Literacy Concepts	NA	13%
None	NA	0%

Table 4.25: Literacy information content uncovered across the observations and the survey

Math

For the math content there were several differences in the data between the observations and survey. There were a few different types of math content where the survey responses were a lot higher than the observations. These include shapes, number identification, patterns, addition, and subtraction. These differences may be due to the increased focus on STEM concepts in library programming in the past few years. They also may be due to the broader scope of the survey versus the more limited scope of the observations. One-to-one correspondence was the only information content area where the observations revealed higher percentages than the survey. This is most likely due to a lack of understanding of how this concept is encouraged.

Information Content Area	Observations – percentage of storytimes	Survey - percentage of responses
Counting	90%	96%
Shapes	35%	81%
Number Identification	30%	77%
Size/Measurement	45%	56%
Patterns	10%	53%
1 to 1 correspondence	90%	50%
Addition	15%	41%
Subtraction	10%	41%
Other Math Concepts	NA	6%
None	NA	2%

Table 4.26: Math information content uncovered across the observations and the survey

Science

For the science content there were several differences in the data between the observations and survey. There were differences in two different topic areas: nature and weather. These are more than likely due to the broader scope of the survey versus the more limited scope of the observations.

Information Content Area	Observations - percentage of responses	Survey – percentage of responses
Animals	85%	91%
Nature	20%	81%
Weather	15%	75%

Human Body	80%	74%
Space	NA	44%
Other Science Content	NA	1%
None	NA	6%

Table 4.27: Science information content uncovered across the observations and the survey

Other Content

For the other information content there were several differences in the data between the observations and survey. There were differences across all of the types of information content included in the other category. The responses from the survey indicated a larger amount of social and emotional content than was actually found in the observations. This is probably due to the stricter definition of information content used in the observations. If a broader definition was used in the observations, the amount of social and emotional content in the observations may be closer to the amount reported in the survey. The responses from the survey also indicated a larger amount of cultural information and foreign languages than were found in the observations. This may be due to the more recent increased focus on cultures and social justice in library programming. Finally, the observations revealed a higher amount of information content related to storytime and library rules and routines than what was uncovered during the survey. This is probably due to the fact that storytime providers may not even realize the many ways they communicate content related to storytime and library rules and routines.

Information Content Area	Observations - percentage of storytimes	Survey - percentage of responses
Social/Emotional	65%	88%
Other cultures/countries	25%	59%

Storytime and Library Rules and Routines	85%	53%
Foreign Language	20%	43%
Additional Other Content	NA	6%
None	NA	2%

Table 4.28: Other information content uncovered across the observations and the survey

4.4 How do storytime providers communicate and share information with the children and adults attending their storytimes?

Research question 2 examines the ways that storytime providers communicate and share information in order to understand the information processes incorporated in storytime. Information processes are identified by Eisenberg and Small as the second dimension in the information base (1993). The theory of Multimodality (Kress 2000) also helped to inform the collection and analysis of the data for research question 2. Multimodality puts forth the idea that people use many different ways, or modes, to communicate so individuals should not privilege language but should instead look at all of the ways that people are communicating. Because of this the collection and analysis of data went broader than just the verbal content and looked at all of the ways that storytime providers are communicating and sharing information.

Through the observations it became apparent that storytimes are comprised of several broad, common elements through which librarians are communicating information. Within these elements, storytime providers are incorporating two types of information processes. They use a one-way communication of information, which has been labeled information transfer, and a two-

way communication of information, labeled information interaction, to encourage the children to interact with the information and continue the communication exchange.

4.4.1 Elements of storytime

The observations revealed that the storytimes are comprised of several common broad elements. Some of these elements are commonly understood activities, but others are not. For those that are not commonly understood, a description and an example are provided below the table. These common elements are detailed in the table below:

Elements of storytime		Observations (percentage of storytimes)	Observations (number of storytimes)	Surveys (percentage of respondents)	Surveys (number of respondents)
Reading		100%	20	99%	67
Singing		95%	19	94%	64
Introductory talk		75%	15	NA	NA
Oral storytelling		55%	11	29%	20
Theme talk		70%	14	50%	34
Say chants/rhymes		70%	14	91%	62
Activities	Dancing	10%	2	66%	45
	Yoga/Stretching	15%	3	15%	10
	Other Movement	30%	6	72%	49
	Playing games	30%	6	34%	23
	Hands-on activities	10%	2	57%	39
Caregiver tip talk		25%	5	NA	NA
Craft talk		20%	4	NA	NA

Table 4.29: Elements of storytime uncovered across the observations and survey

Activities:

Activities are defined as any storytime element that does not fit within the reading, singing, and rhyming/chant, and talking elements. The principal activities that fell within this element were 1) games and 2) movement activities.

An example of a part of storytime that was coded as an activity is: *Storytime provider stands up. "Can you stretch? We have been sitting for a while. Can you stretch up tall and up high?" and she stretches up high and wiggles her fingers. "Can you stretch down low?" and she bends over and touches her toes. "Can you stretch wide? How wide can you stretch? Be careful of your friends." She reaches her arms out wide beside her and she spreads her legs as wide as she can go. "Can you go straight and narrow?" and she brings her arms to her sides and puts her legs together. "Can you stretch your tongue to your nose on your tippytoes?" She stands on her toes and sticks her tongue out. She does it a few times. "We will have to practice that next week. Ready? To the left." and she stretches her arms over her head and leans to the left. "Stretch to the right", and she goes the other way. "Stretch down to the floor", and she bends over and touches the floor. "Stretch up to your full height. Like you are just going to pull that string right out of the top of your head and stand up tall." She acts like she is pulling a string out of the top of her head and stands up tall. "Lastly, can you stretch your mouth a mile and show me a smile?" She smiles really big at them.*

Introductory talk:

Introductory talk was defined as the period of time when the storytime provider is talking to the children welcoming them to storytime. During this time, the storytime provider will often introduce herself, make some announcements about other library programs and cover some information on storytime rules and routines, encourage caregivers to participate, and have open conversation with the children.

An example of a part of storytime that was coded as introductory talk is: *The storytime provider turns around to face the children and says "Hello hello! Good morning! How is everybody?" A few children answer her and she asks, "Is everyone still asleep?" She continues with, "Welcome back for me to storytime. I have been traveling for two weeks. I went on an airplane to a place where I got to see volcanos and I got to ride on ferry boats and go to islands and I got to look at a lot of snow. So, if you have any questions about that…" A child interrupts to tell her something about eating snow. She looks at the child, smiles and says, "or you want to tell me about your experiences we can talk after storytime" Another child says something about eating snow. She nods and says "you like to eat snow, I don't think I ate any snow. I ate a lot of fish and saw one puffin. They try to keep them safe so some of the areas are closed."*

Theme talk:

Theme talk was defined as a period of time that the storytime provider introduces the theme for that storytime. Often, the storytime providers invite the children to participate by asking them questions, relating the theme to their lives or prompting them to make predictions in relation to the theme.

An example of a part of storytime that was coded as theme talk is: *Storytime Provider says, "Boys and girls look at that! We found our special letter of the day. What is the name of that beautiful letter?" The children yell out, "W". She nods and says, "yes, it's the letter W, which is like an upside-down M but it is the letter W. And what sound does the letter W make?" Children say "wh". She says "wh, wh, wh". Puts her finger to her mouth and says, "can you make that sound, wh, wh, wh?" The children repeat the sound and she looks around and says, "very nice" while nodding. "Our special word starts with wh, wh, wh. Can you guess what it is?" She pulls out a box and starts to open it. A child yells out, "something big and furry." She says "something big and furry? And maybe it will make a sound for us. Are you ready to listen? Let's listen." She lifts the top of the box a tiny bit. Then she opens it more and puts her head in and howls. She lifts her head up and asks, "what is big and furry and lives in the woods and says [she makes a howling noise]?" Children yell out, "wolf!" She asks "is it a wolf? What a wonderful W word!" She makes the howling noise again and brings a wolf puppet out of the suitcase, "Look at this big Mr. Wolf. You know boys and girls, we are going to hear my favorite wolf story."*

Craft talk:

Craft talk was defined as a period of time that the storytime provider talks to the children and introduces the craft/art activity that they will be doing at the end of storytime. The provider often shows an example and talks about the process involved in creating the craft.

An example of a part of storytime that was coded as craft talk is: *Storytime provider holds up an example of the craft. "I made a silly face. Isn't that a silly face? I used crayons and I used*

scissors to cut and I used glue. Do you guys like to use scissors and crayons and glue? And did you know that scissors and crayons and glue help you get ready to read? Is that silly? But they do! When you are using your hands and eyes together that's something you need for when you get ready to read. So, it makes you smart, right?" A child adds, "and go to kindergarten." She points at the child and says, "and get ready for kindergarten. Does anyone know the secret to using glue? If you use a whole great big lot, does it dry up well? No, it gets all messy. How many of you know how to use just a little teeny tiny drop of glue?" She raises her hand and some of the children raise their hands. "I want you guys to practice squeezing that bottle so gently that you only get a tiny drop so it will dry quicker. Now I have paper plates and pieces of paper in the other room and you get to make your very own silly face. Let's go make silly faces. And if the color you want isn't on your table feel free to share."

Caregiver tip talk:

Caregiver tip talk was defined as a period of time that the storytime provider is talking to the caregivers to give them tips around learning and development.

An example of a part of storytime that was coded as caregiver tip talk is: *Storytime provider says, "I just want to remind all of the adults that if you have other languages and cultures at home it is really important to share those with your children because they have found that kids who are bilingual have an advantage when they go to school. They are creative thinkers. They are good at thinking on their feet, and they are good at taking something new and making it something different. So, if you are bilingual or have the opportunity to expose your child to*

bilingualism; it's a good idea because it helps to expand their brain power and it's a great way to celebrate your culture and your language."

Summary of Within a Storytime

The storytime observations revealed that storytime providers are incorporating a wide variety of elements in their storytimes. The total number of elements ranged from 8 in one storytime to 23 in another storytime. Overall, there was an average of 12.65 elements included per storytime for the 20 storytimes. On average, across the 20 storytimes there were 3.2 stories, 2.35 songs, 1.9 rhymes/chants, and 1.95 activities per storytime.

4.4.2 Add-on Elements

In addition, the observations and survey revealed that some libraries are adding other elements either before, after, or during their traditional storytime to make it a longer, more immersive experience. The add-on elements that emerged in the observations were craft time, unstructured play time, and snack time. The possibility of uncovering these add-on elements in the observations was limited because the VIEWS2 researchers were instructed to only videotape a 30-minute segment containing the traditional storytime component. As a result, the only way to determine if these elements were present was if they were alluded to during the storytime or if the very beginning or end of the add-on element was captured on videotape. Therefore, it is possible that there were additional add-on elements in the observations besides those identified and described here.

The survey also revealed that storytime providers are adding a wide variety of add-on elements to their storytimes, either before, after, or during the storytime. Seventeen storytime provider

indicated they were providing other add-on elements besides the options provided. These elements include: movement & music, exploring in a community garden, game time around the storytime theme, playdough, and kindergarten readiness activities.

Add-on element	Observations (percentage of storytimes)	Observations (number of storytimes)	Survey (percentage of responses)	Survey (number of responses)
Art/craft time	30%	6	63%	43
Unstructured play time	20%	4	69%	47
Snack time	5%	1	7%	5
Block play time	NA	NA	29%	20
Dramatic play time	NA	NA	10%	7
Hands-on STEM activity	NA	NA	28%	19
Other	NA	NA	25%	17
No add-on element	NA	NA	4%	3

Table 4.30: Add-on elements of storytime uncovered across the observations and survey

The survey percentages are significantly higher than the observations, which may be due to three factors. The limitations of the video-recordings constrained the amount of add-on elements that could be observed. In addition, anecdotal evidence gives the impression that the use of these add-on elements has increased a significant amount in the past few years. Finally, it is possible that some storytime providers interpreted the question incorrectly and reported elements they actually offer during storytimes as add-on elements. All three factors are likely responsible for the differences between the two methodologies.

4.4.3 Phase 1: Storytime Observations

The storytime observations revealed that storytime providers are communicating and sharing information using two key methods: information transfer and information interaction.

Information Transfer

Storytime providers are embodying the theory of multimodality and using a variety of modes to engage in a one-way communication of information with children and caregivers. A few of the modes that storytime providers are using are the same as the elements of storytime, such as reading and singing, while other stretch across all of the elements of storytime, like talking and movement. Some of these modes are commonly understood, but others are not. For those that are not commonly understood, a description and an example is provided below the table.

Storytime Element	Mode of information transfer	Percentage of storytimes	Number of storytimes
Reading/Storytelling (n=20)	Talking	100%	20
	Reading/Storytelling	100%	20
	Incorporating visuals	100%	20
	Using gestures	100%	20
	Acting out concepts	70%	14
	Using voice exaggerations	70%	14
	Movement	25%	5
Singing (n=19)	Talking	100%	19
	Singing	100%	19
	Movement	95%	18
	Incorporating visuals	53%	10
Saying Chants/Rhymes (n=14)	Saying rhymes/chants	100%	14
	Movement	100%	14

	Talking	100%	14
	Incorporating visuals	21%	3
	Acting out something	7%	1
Activities (n=17)	Talking	100%	17
	Movement	88%	15
	Using gestures	71%	12
	Acting out something	47%	8
	Incorporating visuals	41%	7
Talk (introductory talk, theme talk, craft talk, caregiver tip talk) (n=18)	Talking	100%	18
	Incorporating visuals	33%	6
	Acting out something	6%	1

Table 4.31: Modes of information transfer uncovered in the observations

Movement:

Movement was defined as when the storytime provider modeled movements for the children that accompanied the various storytime elements.

An example of movement is: *The storytime provider says, "Everybody stand up!" She stands up. "All right, are you ready? Let's do a little wiggle. Can you wiggle your toes on one foot? Can you wiggle your toes?" She holds up one foot in the air. She points at someone's toes. "Wiggle your toes! Wiggle, wiggle, wiggle. Can you wiggle your toes on your other foot?" She puts her other foot in the air. "Excellent! Now can you wiggle your knees?" She wiggles her knees back and forth. "Can you wiggle your fingers?" She holds her hands in front of her and wiggles her fingers as she moves around the room to be able to look at all of the kids. "Excellent! Let me see your fingers. Wiggle those fingers. Wiggle your hands." She wiggles her hands. "Wiggle your arms!" She starts waving her arms around. "Now wiggle your whole body. Wiggle everything.*

Turn in a circle while you are wiggling." She wiggles her body while turning in a circle. "Okay, so now listening ears," and she cups her hands behind her ears. "Anybody feel like they need to wiggle anything else?" She points at a child and says, "Tom, what do we need to wiggle? Your head?" She starts wiggling her head. "Wiggle your head. Okay. Very good!"

Using gestures:

Using gestures was defined as when the storytime providers used hand gestures to communicate something to the children (i.e. pointing, a come here gesture)

An example of using gestures is: *The storytime provider reads "arriba" from the book, and points into the air. "What do you think that means?" The children say up. She then says "abajo" and points down to the floor. The children say down.*

Acting out concepts:

Acting something out was defined as when as storytime providers acted out a concept.

An example of acting something out is: *When the storytime provider reads about the wolf combing his hair in the book, she pretends to comb her hair.*

Using voice exaggerations:

Using voice or facial exaggerations was defined as when the storytime provider used their voice or facial expressions to act out the character in a book or convey some other emotions.

An example of using voice or facial exaggerations is: *When the storytime provider reads, "and the monster said, who is trying to scare me?", she uses a deep, scary voice. She goes on to read, "and Frightful and Horrid were really scared" and uses a scared, timid voice.*

Multimodality in Information Transfer

The data revealed that the storytime providers were using a variety of modes to engage in information transfer. While each storytime provider incorporated a variety of information transfer modes, there were common modes that occurred across storytimes. The common set of modes used by the storytime providers can loosely be grouped as auditory, visual, and kinesthetic modes. The auditory modes for information transfer were talking, reading/storytelling, singing, saying rhymes/chants, and using voice exaggerations. The visual modes for information transfer were incorporating visual images, using gestures, and acting out concepts. The kinesthetic modes for information transfer included movement and using gestures. While the acting out concepts mode often contains movement, it was considered to be visual because it is meant to be a visual representation of a concept.

The multimodal nature of the information transfer used in storytime becomes clear when looking at the storytime elements with the lens of these three categories of modes. During the storytime element of reading, 100% of the storytime providers communicated information using all three categories of information transfer modes: auditory, visual, and kinesthetic. During singing, 95% of the storytime providers incorporated auditory and kinesthetic modes, and over 50% incorporated visual modes. During rhymes/chants, 100% of the storytime providers used auditory and kinesthetic modes, while only a few used visual modes. During activities, 88% of

the storytime providers used auditory and kinesthetic modes, while 47% used a visual mode. Finally, the periods of talk were the only elements consisted predominately of one category of mode. All of the storytime providers used an auditory mode, while 33% also used a visual mode.

Information Interaction

In addition to engaging in a one-way communication of information with children and caregivers, storytime providers are also incorporating methods by which the children can interact with the information that is being communicated. Similar to information transfer, some of the modes that are being used to encourage children to interact with information are the same as some of the elements of storytime, such as singing and reciting chants and rhymes, while others stretch across all of the elements of storytime., like answering questions and gross and fine motor movement. Across most of the elements of storytime, storytime providers are offering a variety of ways for children to interact with the information content they are incorporating into storytime.

Storytime Element	Mode of information interaction	Percentage of storytimes	Number of storytimes
Reading/Storytelling (n=20)	Answering questions	95%	19
	Guessing/identification of something	85%	17
	Repeating or filling in content	75%	15
	Making prediction/hypothesis	70%	14
	Pretending/Imagining things	50%	10

	Gross motor movement	25%	5
Singing (n=19)	Singing	100%	19
	Gross motor movement	95%	18
	Fine motor movement	53%	10
	Pretending/Imagining things	42%	8
	Following rhythm	21%	4
	Awareness of and interaction with peers	11%	2
	Making prediction/hypothesis	5%	1
Saying Chants/Rhymes (n=14)	Saying chants/rhymes	100%	14
	Fine motor movement	86%	12
	Gross motor movement	79%	11
	Pretending/Imagining things	36%	5
	Making prediction/hypothesis	14%	2
	Guessing/identification of something	14%	2
	Repeating or filling in content	14%	2
Activities (n=17)	Gross motor movement	88%	15
	Guessing/identification of something	53%	9
	Pretending/Imagining things	35%	6
	Using manipulatives	35%	6
	Answering questions	29%	5
	Fine motor movement	18%	3

	Awareness of and interaction with peers	12%	2
	Following rhythm	6%	1
Talk (introductory talk, theme talk, craft talk, caregiver tip talk) (n=18)	Answering questions	44%	8
	Making prediction/hypothesis	16%	3
	Open discussion	16%	3
	Guessing/identification of something	11%	2
	Pretending/Imagining things	6%	1
	Awareness of and interaction with peers	6%	1
	Repeating or filling in content	6%	1

Table 4.32: Modes of information interaction uncovered in the observations

Writing is another way that some storytime providers were using to encourage children to interact with information. However, because the video-recordings excluded most add-on elements and were limited to what could be seen in the camera range, there is not an accurate understanding of the amount of writing activities that were incorporated in the storytimes observed. The observations did reveal that four storytimes were incorporating writing through the use of nametags and four storytimes incorporated writing during the craft time.

Multimodality in Information Interaction

Because of their diversity, the different modes of information interaction from across all of the storytime elements were harder to group but they can still be loosely grouped using the same

three categories as information transfer. The auditory modes for information interaction were answering questions, guessing/identification of something, repeating/filling in content, making a prediction/hypothesis, singing, saying chants/rhymes, and open discussion. The only visual modes for information interaction was pretending/imagining things. The kinesthetic modes for information interaction were gross motor movement, fine motor movement, following rhythm, using manipulatives, and awareness of and interaction with peers. While using manipulatives and awareness and interaction with peers could possibly be placed in other categories, in storytime they were always based around movement so they were included in the kinesthetic modes.

The multimodal nature of the information interaction opportunities used in storytime becomes clear when looking at the storytime elements with the lens of these three categories of modes. During the storytime element of reading, 95% of the storytime providers provided opportunities for children to interact with information using an auditory mode of information interaction, while 50% incorporated a visual mode and 25% incorporated a kinesthetic mode. During singing, 95% of storytime providers incorporated both auditory and kinesthetic modes by which children could interact with information, and 42% incorporated a visual mode. During rhymes/chants, 86% of storytime providers incorporated both auditory and kinesthetic modes by which children could interact with information, and 36% incorporated a visual mode. During activities, 88% of storytime providers incorporated a kinesthetic mode, over 53% incorporated an auditory mode, and 35% incorporated a visual mode. Similar to information transfer, the modes of information interaction incorporated during periods of talk were predominately auditory.

4.4.4 Phase 2: Survey of Storytime Providers

The survey was used to uncover more detail around the two major types of information communication that were uncovered during the observations: information transfer and information interaction.

Information Transfer

The survey did not specifically ask about the ways that storytime providers are communicating information because some of the modes uncovered in the observations align with the storytime elements, such as reading, singing, and movement, while other modes align with the information resources in how images and books provide the visual aspects of communication. Because of that, if a storytime provider indicated they incorporated reading, singing, and movement as storytime elements, they were also considered to be using them as modes of communication. If a storytime provider indicated they were incorporating books and/or images, they were considered to be a mode of communication. Similar to the observations, through the survey, it became apparent that storytime providers are using a variety of modes to communicate information to the children. In fact, most of the modes uncovered in the observations were used by almost all of the storytime providers who responded to the survey.

Mode of information transfer	Percentage of responses	Number of responses
Talking	100%	68
Reading/Storytelling	100%	68
Visual	100%	68
Singing	94%	64
Movement	93%	63
Saying Chants/Rhymes	92%	62

Table 4.33: Modes of information transfer uncovered in the survey

While not separated by storytime element, the data from the survey also provides support for the multimodal nature of storytime overall, with a majority of storytime providers demonstrating that they use a variety of modes to communicate information.

Information Interaction

In the survey, the storytime providers were asked to indicate the ways that they encourage children to interact with the content of the storytime. They were also provided with an option to fill in additional methods they used that were not accounted for in the existing answers. Similar to the observations, in the survey, storytime providers reported using a variety of methods to encourage children to interact with the information resources and content included in the storytime. Six storytime providers reported they used other methods to encourage children to interact with the information content. These methods included: encouraging the children to continue talking that day about the theme or letter of the day or encouraging the children to share what they know and are curious about.

Mode of Information Interaction	Percentage of responses	Number of responses
Singing	90%	61
Repeating words and phrases	88%	60
Answering questions	87%	59
Gross motor movement	84%	57
Reciting rhymes and chants	78%	53
Conversations/open discussion	77%	52
Fine motor movement	77%	52
Using manipulatives	71%	48

Participating in hands-on activities	56%	38
Interacting with peers	54%	37
Acting things out	50%	34
Participating in games	31%	21

Table 4.34: Modes of information interaction uncovered in the survey

Because of the uncertainty around the amounts and type of writing that was occurring in the observations, the survey included separate questions on writing activities to understand if storytime providers are including them and how. Fifty storytime providers indicated that they incorporate writing activities in storytime, while eighteen indicated they do not. Of the ways that they incorporate writing, twenty-three reported having children write nametags, twenty-six reported having children write during craft, nineteen reported having children draw letters with their hands or feet, and nineteen indicated that they incorporate writing in other ways. These additional methods include: providing chalkboards or clipboards with related writing activities during a book reading in storytime, practicing letters on plastic bags filled with shaving cream, and making letters with sticks.

4.4.5 Putting the observations and survey together

When looking at the data from the observations and the survey together many of the categories are in alignment across the two methodologies.

Information transfer

For information transfer, most of the data from the survey aligns with the data from the observations. The only difference was found for the mode of saying chants/rhymes where the

survey responses were higher than what was observed in the observations. This may be due to the broader scope of the survey versus the more limited scope of the observations.

Mode of information transfer	Observations - percentage of storytimes	Survey - percentage of responses
Talking	100%	100%
Reading/Storytelling	100%	100%
Visual	100%	100%
Singing	95%	94%
Movement	100%	93%
Saying Chants/Rhymes	70%	91%

Table 4.35: Modes of information transfer uncovered across the observations and survey

Information Interaction

For information interaction, some of the data from the survey aligns with the data from the observations. Differences were found for the following modes of information interaction: repeating words and phrases, conversations/open discussion, using manipulatives, interacting with peers, and acting things out. For the mode of repeating words and phrases, using manipulatives, and interacting with peers, the survey responses were higher than what was observed. This is probably due to the broader scope of the survey versus the more limited scope of the observations. For the mode of conversations/open discussion, the survey responses were higher than what was observed, which may be due to the narrow definition of the mode used in the observations versus a broader interpretation from the survey respondents. Finally, the larger number of survey responses for the mode of acting things out may be due to storytime providers not realizing the extent to which they are acting things out in storytimes.

Mode of Information Interaction	Observations - percentage of storytimes	Survey – percentage of responses
Singing	95%	90%
Repeating words and phrases	55%	88%
Answering questions	100%	87%
Gross motor movement	100%	84%
Reciting rhymes and chants	70%	78%
Conversations/open discussion	40%	77%
Fine motor movement	80%	77%
Using manipulatives	30%	71%
Participating in hands-on activities	NA	56%
Interacting with peers	25%	54%
Acting things out	80%	50%
Participating in games	NA	31%

Table 4.36: Modes of information interaction uncovered across the observations and survey

4.5 What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?

Research question 3 examines the roles that storytime providers, children, and parents/caregivers play while attending storytime. Roles of the players are identified by Eisenberg and Small as the third dimension in the information base (1993). Both the observations and survey were used to answer research question three.

4.5.1 Phase 1: Storytime Observations

The observations of the storytime providers and children and adults were used to understand the roles that each attendee group is playing while attending storytime.

Storytime Provider

During the observations, it became apparent that the storytime providers are playing five major roles while delivering storytime: designer, leader, educator, manager, and partner. For the most part they were playing all of these roles across a majority of the twenty storytimes see table 4.37). Descriptions and examples of each role are provided below the table.

Storytime Provider Role	Percentage of storytimes	Number of storytimes
Designer	90%	18
Leader	100%	20
Educator	100%	20
Manager	75%	15
Partner	55%	11

Table 4.37: Roles of storytime providers uncovered in observations

Designer:

This role encompasses how storytime providers are designing their storytimes and all of the content in them. Most of the designer role takes place behind the scenes, but it was frequently seen during storytime as storytime provider overtly made decisions about content while in the middle of storytime. Furthermore, the storytime provider occasionally invited the children to help determine the content of the storytime.

The storytime provider says, "oh my goodness, shall we do another song?" The children say "yes!" She goes to get some shaker eggs that kids hadn't brought up. "Okay, we will do another

song. Remember how we do this? You have to listen to the music." and she puts her fingers up to her ears.

Leader:

The leader role occurs throughout storytime as storytime providers are leading songs, rhymes, and activities for the children. They often use a multimodal approach to leading activities, verbalizing the instructions while acting them out. The leader role often crosses with the partner role as the storytime provider encourages the caregivers to participate as they are leading the songs, rhymes, and activities.

The storytime provider says, "Do you like to play with shakers and listen to music? Should we listen to a song about a codfish ball? Do you know what a codfish is?" A boy tells her something about Angry Birds. "I don't have an Angry Bird song but I do have a song about codfish. So, I am going to have everyone come up and get a shaker." When they have shakers, she asks "are you ready?" and she turns on the music. She starts dancing and shaking her shaker. "Can you show me how a fish would dance? How would a fish dance? Can you shake your fins?" and she makes fins with her arms. "Can you swim" and she makes swimming motions. "Good job! Can you swim your shakers all the way up?" She moves her arms up in the air in a wavy motion. "Now, swim your way down." And she moves her arms in a wavy motion and bends over. "Can you put your flippers out to the side?" and she puts her arms out to the side and shakes them. "Okay, shake it really loudly" and she starts shaking really hard. "Can you shake them really softly?" and she puts her finger to her lips. "Fantastic! Can you shake them really fast?" and she shakes them fast. "Can you shake them slow?" and she shakes them slow. "Great job. Can

you shake them all around?" and she starts shaking them all around. "Shake them as wild and crazy as you can" and she starts jumping up and down. "That's as wild and crazy as you can shake them? Okay, give them one last good shake," and she shakes it really good. She motions for them to come up. "We are going to bring the shakers back up." She turns off the music and puts her shaker in the box.

Educator:

The educator role occurs throughout storytime when storytime providers are finding ways to incorporate content that supports learning for children and their caregivers.

The storytime provider turns around and gets something from table. "All right, let's do our word of the day. So, remember that every letter has a name and they all make different sounds." She pulls a letter out of her bag and holds it up. "This letter's name is…" and some of the children say F. She puts it on the board. "It makes the ffff sound" and she points at a boy who is also saying it, "like they are…." and she acts out flying. Several of the children say flying. "flying that's the fff sound." A kid says fast and she says "ffff fast". She pulls out another letter and holds it up and says, "and this one is called…" Several children say I. She puts it on the board. A child says, "like for island." She points at him and says, "I for island or for ice cream" and she pretends she is eating an ice cream cone. A child says, "and for eye" and she says "it sounds just like eye" and points to her eye, "but it is spelled differently" she points to the I on the board and says our letter I is going to make the "eye" sound. She pulls another letter out of the bag and says, "this letter is called …." Everyone says V. A child says, "for volcano." She says "what kind of sound is that? Vvvvvvvv like volcano!" and she throws her arms up in the air. A boy

says "and velociraptor." She laughs and says "and velociraptor." She holds up a letter E. "This is the last letter in the word but it doesn't make any noise at all but it is important that it is there. This letter is called E." She puts it on the board and says, "it does not say anything in our word today." A boy says "for equator." She says, "E could be for equator." She looks at him and smiles. "Great vocabulary!" She looks out at the caregivers and says, "you know, they actually say that the most important predictor for getting children ready to read is vocabulary so that's why we read lots of different books with lots of different language in them. So, our word today is F-I-V-E" and she drags it out and holds up five fingers. "Show me five! There's five!" and she is turning around so all of the kids can see her hand and she can see what they are doing. She starts shaking her hand with her fingers outstretched, "five eggs" and then she puts the other hand up and shakes it, "and another five eggs. That makes 10!" and she shakes both hands.

Manager:

The manager role refers to when storytime providers were working to manage specific children's behaviors, manage the behavior of the group, or to help children understand the rules and routine of storytime.

The storytime provider leans down and says to a boy sitting in front of her, "move your arms and body away from him as I heard him say stop it. You need to keep your hands to yourself." The boy says something to her. She responds with, "you can choose to sit somewhere else then but you need to keep your hands to yourself." The boy leaves and goes to sit with his caregiver when prompted. The storytime provider leans down to the other child and says, "thank you for using your words. Good job!"

Partner:

The partner role occurs when they need to caregivers to help them with something, either managing a child's behavior, modeling or scaffolding activities for their child, or helping with an activity.

The storytime provider says, "If you have noticed, parents, we do not have any activity tables out today because I have giant enormous parachute and unfortunately I only have two hands. So, if I want to play with the parachute, I need lots of parents to help me if you want to stay for that."

Children

Similar to the storytime providers, the children were observed playing five major roles while attending storytime: active participant, observer, learner, co-designer, and peer. For the most part they were playing many of these roles across all twenty storytimes. Descriptions and examples of each role are provided below the table.

Children's roles	Percentage of storytimes	Number of storytimes
Active participant	100%	20
Observer	100%	20
Learner	100%	20
Co-designer	35%	7
Peer	90%	18

Table 4.38: Children's roles uncovered in observations

Active participant:

The active participant role was used to describe when a child was actively participating in the information content. This could include singing or saying a song/rhyme while doing the motions or active involvement in a conversation with the storytime provider.

When the storytime provider asks if they know what humongous means, a boy puts his arms in the air and says, "it means really large." The storytime provider then asks the children to say humongous and be humongous at the same time. So, the children say humongous and spread out their arms wide. A caregiver gives the boy five after he defined the word. A child repeats hippopotamus after the storytime provider says it and the children nod when the storytime provider asks if a hippopotamus is humongous.

Observer:

The observer role was used to describe when a child (of the preschool age) was attending to the storytime content but not actively participating.

A girl is sitting in her caregiver's lap with a stuffed animal. She stays there listening quietly for the first half of storytime.

Learner:

The learner role was used to describe the instances where a child took an active role in the learning experience, such as asking questions about something.

The storytime provider says "Out of the second egg came a monster that was frightful and so they named her Frightful and she roared really well too." All of the children roar loudly. Then a girl asks, "what does frightful mean?" The storytime provider responds "scary".

Co-designer:

The co-designer role was used to describe cases when the children helped to determine the storytime content.

The storytime provider asks, "are you ready for this one?" She holds up her hands to form a rocket ship. The children are following her motions and saying the words with her. She starts zooming her hands back and forth and singing, "zoom, zoom, zoom, we're going to the moon" and she points up at the sky. Then she starts marching in place and says, "if you want to take a trip, climb aboard my rocket ship. Zoom, zoom, zoom, we're going to the moon. 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, blast off!" During the countdown they all crouch down and jump up in the air for the blast off. When they finish the storytime provider asks "again?" The children say "faster!" She says "faster? Okay!" They do again, but faster. When they finish the storytime provider asks, "want to do it one more time?" The children say "faster!" so they do it again, but this time they do it super fast.

Peer:

The peer role was used to describe circumstances where children were interacting with each other.

A girl goes over and sits next to another girl. The other girl makes a face at the girl that sat next to her, but the girl that sat down reaches over and rubs the other girl's back, then the other girl snuggles up to next her.

Parents/Caregivers

The behaviors of the parent/caregivers were observed to understand the roles that they are playing while attending storytime. While some storytimes across the nation do not have caregivers in attendance, all 20 storytimes that were observed had parents/caregivers in attendance. However, because these videos were originally taken with the purpose of observing the children, some videos only had a partial view of the parents/caregivers which limited the observations of their behaviors. Overall, the parents/caregivers were observed playing five major roles across a majority of the storytimes. Descriptions and examples of each role are provided below the table.

Roles of parents/caregivers	Percentage of storytimes	Number of storytimes
Active participant	100%	20
Learning support	100%	20
Caregiver	100%	20
Peer	75%	15
Sideline	80%	16

Table 4.39: Parent/caregivers' roles uncovered in observations

Active Participant:

The active participant role was used to described where the caregivers were actively participating in the information content.

An example of a caregiver in the active participant role:

Most of the caregivers sing the song with the storytime provider. As the storytime provider is reading the story, one caregiver makes a few comments on the content. During the story, several of the caregivers help the storytime provider recount the repetitive sequence in the story.

Learning Support:

The learning support role refers to instance where the caregiver is supporting learning for the child. This could include where a caregiver provides further explanation of something to extend learning or where the caregiver scaffolds/models how to do something for the child.

An example of a caregiver in the learning support role:

The storytime provider and the children are putting together a quilt that has quilt blocks with the numbers on them, and they start looking for who has the quilt block with three on it. A caregiver gets her son's attention, points at his quilt block in his hand, and holds up 3 fingers.

Caregiver:

The caregiver role referred to when the caregiver was attending to the child's needs in a variety of ways, such as wiping their nose or emotional support. The caregiver role also included instances where they were caring for a younger child or managing the child's behavior.

An example of the caregiver role is:

A toddler starts fussing so her caregiver gets up with her and walks around the room. She then comes back, sits down, and breastfeeds her. Another caregiver is holding a baby's hands as she tries to stand up.

Peer:

The peer role was used to describe instances where the caregivers where interacting with each other.

An example of the peer role is:

Two caregivers are sitting down and talking to each other. Then a few other caregivers join in so several of them are talking to each other.

Sideline

The sideline role was used to refer to where caregivers appeared to be listening to the storytime content but not participating in it or engaging with their child; or when caregivers were doing something completely unrelated to storytime, such as reading a book or looking at their phone.

An example of the sideline role is:

One caregiver is sitting at the back of the room reading a book for most of storytime.

4.5.2 Phase 2: Survey

The survey was used to understand what roles the storytime provider would like the children and adults to play while attending their storytime. Questions were included that asked them to

indicate the different roles they would like children and adults to play while at storytime. They were given options to indicate that they don't have expectations of the children and adults or to fill in other roles they expect them to play.

Children

The storytime providers indicated a variety of roles that they would like the children to play while attending their storytimes (see Table 4.40). Three indicated that they don't have any expectations for the roles that children should play while attending storytime. Nineteen storytime providers indicated that there were other roles they expected children to play beyond those provided. These roles included: have fun, to learn, to interact and participate at their comfort level, to be excited about storytime content, make good memories, meet new friends, use their imaginations, and to learn to socialize.

Roles of children	Percentage of responses	Number of responses
Participate in songs and rhymes	93%	63
Interact with storytime content by answering questions and talking to storytime provider	87%	59
Know how to interact in a group	78%	53
Interact with peers	77%	52
Follow directions	74%	50
Listen quietly	41%	28
Help determine storytime content	34%	23

Sit with caregiver	32%	22
Sit separately from caregiver	7%	5
Attend without caregiver	3%	2

Table 4.40: Storytime providers' expectations of children's roles during storytime

Parents/Caregivers

The storytime providers indicated a variety of roles that they would like the caregivers to play while attending their storytimes (see Table 4.41). None of the storytime providers indicated that they don't have any expectations for the roles that parents/caregivers should play while attending storytime. Seven storytime providers indicated that there were other roles they expected parents/caregivers to play beyond those provided. These roles include: have fun, make some good memories with their child, take away some new books, feel comfortable with approaching them and asking questions, and connect with other parents.

Roles of parents/caregivers	Percentage of responses	Number of responses
Actively participating with their child	97%	66
Model for their child	91%	62
Interact with storytime content	88%	60
Manage child's behavior	79%	54
Not doing something unrelated to storytime	75%	51
Scaffold activities for their child, if needed	60%	41
Help with producing some activities	19%	13

Table 4.41: Storytime providers' expectations of caregivers' roles during storytime

4.6 What types of learning behaviors are the children exhibiting while attending storytime?

Research question 4 seeks to understand the types of learning behaviors that children are demonstrating while attending storytimes, because the learning behaviors should provide some insight into what children are gleaning from the information aspects of storytime. The learning behaviors of the children were explored through the observations and the survey.

4.6.1 Phase 1: Storytime Observations

In the observations, the children's learning behaviors were determined using a tool created from the Head Start Early Learning Outcomes Framework. Field notes from the observations of the children attending storytime were coded using this tool. The tool provides indicators or behaviors for preschool-aged children across five domains of child development and learning: Approaches to Learning; Social and Emotional; Language and Literacy, Cognition; and Perceptual, Motor, and Physical. Each domain is split into a few sub-domains, and each sub-domain includes a number of goals, which encompass the specific behaviors that are used for coding (see figure 1). The data was analyzed at the goal level where if one indicator under the goal was coded for in a storytime, the goal was considered to be observed for that storytime. The data presented below is organized by domain.

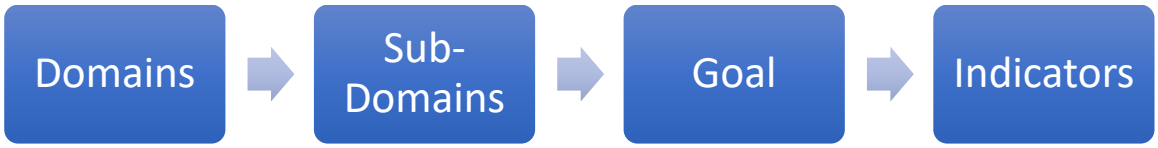


Figure 4.1: Coding Tool Organization

DOMAIN: Approaches to Learning

In the Head Start Framework, the Approaches to Learning domain includes sub-domains that highlight the important skills that children will need to be successful with learning in school and learning throughout life, such as emotional and behavioral self-regulation, executive function (cognitive self-regulation), curiosity, and creativity. For the sub-domains of emotional and behavioral self-regulation, executive function (cognitive self-regulation), and curiosity, a large number of the goals under each sub-domain were observed across a majority of the storytimes. Creativity was the one sub-domain which was only observed in a small percentage of storytimes. Table 4.42 provides the percentage of storytimes in which each goal was observed. For comparison purposes, the survey revealed that 75% of the storytimes providers who responded felt that children were acquiring executive function and self-regulation skills while attending their storytimes. In addition, 96% of the storytime providers reported feeling that children were learning to behave in a group setting and 77% felt that children were learning the storytime and library rules and routines while attending their storytimes.

DOMAIN: APPROACHES TO LEARNING	Percentage of storytimes with at least 1 indicator observed	Number of storytimes with at least 1 indicator observed	Percentage of indicators coded for all 20 storytimes
SUB-DOMAIN: EMOTIONAL AND BEHAVIORAL SELF-REGULATION			
Goal P-ATL 1. Child manages emotions with increasing independence. (# of indicators = 7)	100%	20	32%

Goal P-ATL 2. Child follows classroom rules and routines with increasing independence. (# of indicators = 4)	100%	20	80%
Goal P-ATL 3. Child appropriately handles and takes care of classroom materials. (# of indicators = 3)	65%	13	55%
Goal P-ATL 4. Child manages actions, words, and behavior with increasing independence. (# of indicators = 7)	100%	20	45%
SUB-DOMAIN: COGNITIVE SELF-REGULATION (EXECUTIVE FUNCTIONING)			
Goal P-ATL 5. Child demonstrates an increasing ability to control impulses. (# of indicators = 5)	100%	20	40%
Goal P-ATL 6. Child maintains focus and sustains attention with minimal adult support. (# of indicators = 4)	100%	20	60%
Goal P-ATL 7. Child persists in tasks (# of indicators = 3)	70%	14	33%
Goal P-ATL 8. Child holds information in mind and manipulates it to perform tasks. (# of indicators =4)	100%	20	78%
Goal P-ATL 9. Child demonstrates flexibility in thinking and behavior. (# of indicators = 5)	100%	20	62%
SUB-DOMAIN: INITIATIVE AND CURIOSITY			
Goal P-ATL 10. Child demonstrates initiative and independence. (# of indicators = 6)	100%	20	35%
Goal P-ATL 11. Child shows interest in and curiosity about the world around them. (# of indicators = 4)	95%	19	45%
SUB-DOMAIN: CREATIVITY			

Goal P-ATL 12. Child expresses creativity in thinking and communication. (# of indicators = 4)	20%	4	6%
Goal P-ATL 13. Child uses imagination in play and interactions with others. (# of indicators = 5)	30%	6	7%

Table 4.42: Goals observed during the observations in the Approaches to Learning domain

DOMAIN: Social and Emotional

In the Head Start Framework, the Social and Emotional domain includes sub-domains that highlight the important relationships and skills that children will need for success in learning in school and throughout life, but also in many other parts of their life. These include Relationships with Adult, Relationships with Other Children, Emotional Functioning, and Sense of Identity and Belonging. For the sub-domain of Relationships with Adults, both goals were observed across all of the storytimes. For the sub-domain of Relationships with Other Children, two of the three goals were observed across a majority of the storytimes. The sub-domains of Emotional Functioning and Sense of Identity and Belonging both had two of goals that were observed in 50% or more of the storytimes. Table 4.43 provides the percentage of storytimes in which each goal was observed. For comparison purposes, the survey revealed that 84% of the storytimes providers who responded felt that children were learning and acquiring social and emotional concepts and skills while attending their storytimes.

DOMAIN: SOCIAL AND EMOTIONAL	Percentage of storytimes with at least 1 indicator observed	Number of storytimes with at least 1 indicator observed	Percentage of indicators coded for all 20 storytimes
SUB-DOMAIN: RELATIONSHIPS WITH ADULTS			
Goal P-SE 1. Child engages in and maintains positive relationships and	100%	20	84%

interactions with adults. (# of indicators = 8)			
Goal P-SE 2. Child engages in prosocial and cooperative behavior with adults. (# of indicators = 5)	100%	20	63%
SUB-DOMAIN: RELATIONSHIPS WITH OTHER CHILDREN			
Goal P-SE 3. Child engages in and maintains positive interactions and relationships with other children. (# of indicators = 6)	95%	19	62%
Goal P-SE 4. Child engages in cooperative play with other children. (# of indicators = 6)	65%	13	15%
Goal P-SE 5. Child uses basic problem-solving skills to resolve conflicts with other children. (# of indicators = 4)	10%	2	5%
SUB-DOMAIN: EMOTIONAL FUNCTIONING			
Goal P-SE 6. Child expresses a broad range of emotions and recognizes these emotions in self and others. (# of indicators = 4)	5%	1	1%
Goal P-SE 7. Child expresses care and concern toward others. (# of indicators = 3)	55%	11	18%
Goal P-SE 8. Child manages emotions with increasing independence. (# of indicators = 7)	100%	20	32%
SUB-DOMAIN: SENSE OF IDENTITY AND BELONGING			
Goal P-SE 9. Child recognizes self as a unique individual having own abilities, characteristics, emotions, and interests. (# of indicators = 2)	50%	10	25%
Goal P-SE 10. Child expresses confidence in own skills and positive feelings about self. (# of indicators = 3)	60%	12	23%

Goal P-SE 11. Child has sense of belonging to family, community, and other groups. (# of indicators = 3)	0%	0	0%

Table 4.43: Goals observed during the observations in the Social and Emotional domain

DOMAIN: Language and Literacy

In the Head Start Framework, the Language and Literacy domain actually splits into two domains, Language and Communication and Literacy, which both include sub-domains that highlight the important language and literacy skills that children will need for success in learning in school and throughout life, as well as other parts of their life.

The sub-domains in Language and Communication include Attending and Understanding, Communicating and Speaking, and Vocabulary. For the sub-domain of Attending and Understanding, both goals were observed across all of the storytimes. For the sub-domain of Communicating and Speaking, two of the three goals were observed across a majority of the storytimes. For the sub-domain of Vocabulary, both goals were observed across a majority of the storytimes. Table 4.44 provides the percentage of storytimes in which each goal was observed for the Language and Communication domain. For comparison purposes, the survey revealed that 96% of the storytimes providers who responded felt that children were learning and acquiring early literacy concepts and skills while attending their storytimes. In addition, 25% of the storytime providers reported that they felt that children were learning other languages in their storytimes.

DOMAIN: LANGUAGE AND COMMUNICATION	Percentage of storytimes with at least 1 indicator observed	Number of storytimes with at least 1 indicator observed	Percentage of indicators coded for all storytimes
SUB-DOMAIN: ATTENDING AND UNDERSTANDING			
Goal P-LC 1. Child attends to communication and language from others. (# of indicators = 2)	100%	20	100%
Goal P-LC 2. Child understands and responds to increasingly complex communication and language from others. (# of indicators = 5)	100%	20	59%
SUB-DOMAIN: COMMUNICATING AND SPEAKING			
Goal P-LC 3. Child varies the amount of information provided to meet the demands of the situation. (# of indicators = 3)	40%	8	15%
Goal P-LC 4. Child understands, follows, and uses appropriate social and conversational rules. (# of indicators = 2)	95%	19	68%
Goal P-LC 5. Child expresses self in increasingly long, detailed, and sophisticated ways. (# of indicators = 3)	100%	20	93%
SUB-DOMAIN: VOCABULARY			
Goal P-LC 6. Child understands and uses a wide variety of words for a variety of purposes. (# of indicators = 7)	95%	19	20%
Goal P-LC 7. Child shows understanding of word categories and relationships	90%	18	16%

among words. (# of indicators = 7)			

Table 4.44: Goals observed during the observations in the Language and Communication domain

The sub-domains in Literacy include Phonological Awareness, Print and Alphabet Knowledge, Comprehension and Text Structure, and Writing. For the sub-domain of Phonological Awareness, the only goal was observed across a majority of storytimes. Similar to Phonological Awareness, both goals in the sub-domain of Comprehension and Text Structure were observed across a majority of storytimes. For the sub-domain of Print and Alphabet Awareness, while both goals were observed across a majority of the storytimes, the percentage of storytimes was a lower than the percentage of storytimes for phonological awareness and comprehension and text structure. Finally, the one goal under the sub-domain of Writing was observed in less than half of the storytimes. Table 4.45 provides the percentage of storytimes in which each goal was observed for the Literacy domain.

DOMAIN: LITERACY	Percentage of storytimes with at least 1 indicator observed	Number of storytimes with at least 1 indicator observed	Percentage of indicators coded for all storytimes
SUB-DOMAIN: PHONOLOGICAL AWARENESS			
Goal P-LIT 1. Child demonstrates awareness that spoken language is composed of smaller segments of sound. (# of indicators = 7)	90%	18	22%
SUB-DOMAIN: PRINT AND ALPHABET KNOWLEDGE			
Goal P-LIT 2. Child demonstrates an	75%	15	22%

understanding of how print is used (functions of print) and the rules that govern how print works (conventions of print). (# of indicators = 6)			
Goal P-LIT 3. Child identifies letters of the alphabet and produces correct sounds associated with letters. (# of indicators = 4)	55%	11	19%
SUB-DOMAIN: COMPREHENSION AND TEXT STRUCTURE			
Goal P-LIT 4. Child demonstrates an understanding of narrative structure through storytelling/re-telling. (# of indicators = 4)	90%	18	36%
Goal P-LIT 5. Child asks and answers questions about a book that was read aloud. (# of indicators = 6)	90%	18	26%
SUB-DOMAIN: WRITING			
Goal P-LIT 6. Child writes for a variety of purposes using increasingly sophisticated marks. (# of indicators = 7)	40%	8	12%

Table 4.45: Goals observed during the observations in the Literacy domain

DOMAIN: Cognition

In the Head Start Framework, the Cognition domain actually splits into two domains, Mathematics Development and Scientific Reasoning, which both include sub-domains that highlight the important math and science reasoning skills that children will need for success in learning in school and throughout life, as well as other parts of their life.

The sub-domains in Mathematics Development include Counting and Cardinality, Operations and Algebraic Thinking, Measurement, and Geometry and Spatial Sense. For the sub-domain of Counting and Cardinality, two of the goals were observed across a majority of the storytimes, while none of the other three goals were observed in higher than 50% of the storytimes. For the sub-domain of Operations and Algebraic Thinking, both goals were observed across only a small percentage of storytimes. For the sub-domain of Measurement, the one goal was observed across only a small percentage of storytimes. For the sub-domain of Geometry and Spatial Sense, one goal was observed across a majority of storytimes, which the other goal was only observed across a small percentage of storytimes. Table 4.46 provides the percentage of storytimes in which each goal was observed for the Mathematics Development domain. For comparison purposes, the survey revealed that 71% of the storytimes providers who responded felt that children were learning and acquiring early math concepts and skills while attending their storytimes.

DOMAIN: MATHEMATICS DEVELOPMENT	Percentage of storytimes with at least 1 indicator observed	Number of storytimes with at least 1 indicator observed	Percentage of indicators coded for all storytimes
SUB-DOMAIN: COUNTING AND CARDINALITY			
Goal P-MATH 1. Child knows number names and the count sequence. (# of indicators = 2)	90%	18	48%
Goal P-MATH 2. Child recognizes the number of objects in a small set. (# of indicators = 3)	50%	10	32%

Goal P-MATH 3. Child understands the relationship between numbers and quantities. (# of indicators = 5)	80%	16	45%
Goal P-MATH 4. Child compares numbers. (# of indicators = 4)	5%	1	1%
Goal P-MATH 5. Child associates a quantity with written numerals up to 5 and begins to write numbers. (# of indicators = 4)	15%	3	6%
SUB-DOMAIN: OPERATIONS AND ALGEBRAIC THINKING			
Goal P-MATH 6. Child understands addition as adding to and understands subtraction as taking away from. (# of indicators = 4)	20%	4	9%
Goal P-MATH 7. Child understands simple patterns. (# of indicators = 5)	25%	5	5%
SUB-DOMAIN: MEASUREMENT			
Goal P-MATH 8. Child measures objects by their various attributes using standard and non-standard measurement. Uses differences in attributes to make comparisons. (# of indicators = 5)	15%	3	8%
SUB-DOMAIN: GEOMETRY AND SPATIAL SENSE			

Goal P-MATH 9. Child identifies, describes, compares, and composes shapes. (# of indicators = 6)	5%	1	1%
Goal P-MATH 10. Child explores the positions of objects in space. (# of indicators = 3)	100%	20	88%

Table 4.46: Goals observed during the observations in the Mathematics Development domain

The domain of Scientific Reasoning includes two sub-domains: Scientific Inquiry and Reasoning and Problem-solving. For the sub-domain of Scientific Inquiry, two of the goals were observed across a majority of the storytimes, while the third goal was not observed in any of the storytimes. For the sub-domain of Reasoning and Problem-Solving, only one of the goals was observed across a majority of the storytimes. The second goal was not observed in any of the storytimes and the third goal was only observed in one storytime. Table 4.47 provides the percentage of storytimes in which each goal was observed for the Scientific Reasoning domain. For comparison purposes, the survey revealed that 53% of the storytimes providers who responded felt that children were learning and acquiring early science concepts and skills while attending their storytimes.

DOMAIN: SCIENTIFIC REASONING	Percentage of storytimes with at least 1 indicator observed	Number of storytimes with at least 1 indicator observed	Percentage of indicators coded for all storytimes
SUB-DOMAIN: SCIENTIFIC INQUIRY			
Goal P-SCI 1. Child observes and describes	85%	17	20%

observable phenomena (objects, materials, organisms, and events). (# of indicators = 5)			
Goal P-SCI 2. Child engages in scientific talk. (# of indicators = 4)	70%	14	19%
Goal P-SCI 3. Child compares and categorizes observable phenomena. (# of indicators = 3)	0%	0	0%
SUB-DOMAIN: REASONING AND PROBLEM-SOLVING			
Goal P-SCI 4. Child asks a question, gathers information, and makes predictions. (# of indicators = 5)	70%	14	20%
Goal P-SCI 5. Child plans and conducts investigations and experiments. (# of indicators = 5)	0%	0	0%
Goal P-SCI 6. Child analyzes results, draws conclusions, and communicates results. (# of indicators = 6)	5%	1	1%

Table 4.47: Goals observed during the observations in the Scientific Reasoning domain

DOMAIN: Perceptual, Motor, and Physical

In the Head Start Framework, the Perceptual, Motor, and Physical domain includes sub-domains that highlight the important physical development, skills, and knowledge that are important for children to be healthy throughout their lives. The sub-domains in Perceptual, Motor, and Physical include Gross Motor; Fine Motor; and Health, Safety, and Nutrition. For the sub-domain of Gross Motor, both goals were observed across all of the storytimes. For the sub-domain of Fine Motor, the one goal was observed across a majority of storytimes. During coding the sub-domain of Health, Safety, and Nutrition was determined to be not relevant for storytimes so it was excluded from the data analysis. Table 4.48 provides the percentage of storytimes in which the goals under the Gross Motor and Fine Motor sub-domains were observed for the Perceptual, Motor, and Physical domain. For comparison purposes, the survey revealed that 90% of the storytimes providers who responded felt that children were acquiring gross and fine motor skills while attending their storytimes.

Domain: Perceptual, Motor, and Physical Development	Percentage of storytimes with at least 1 indicator observed	Number of storytimes with at least 1 indicator observed	Percentage of indicators coded for all storytimes
SUB-DOMAIN: GROSS MOTOR			
Goal P-PMP 1. Child demonstrates control, strength, and coordination of large muscles. (# of indicators = 4)	100%	20	58%
Goal P-PMP 2. Child uses perceptual information to guide motions and interactions with	100%	20	71%

objects and other people. (# of indicators = 4)			
SUB-DOMAIN: FINE MOTOR			
Goal P-PMP 3. Child demonstrates increasing control, strength, and coordination of small muscles. (# of indicators = 3)	65%	13	45%
SUB-DOMAIN: HEALTH, SAFETY, AND NUTRITION			
Goal P-PMP 4. Child demonstrates personal hygiene and self-care skills.	NA	NA	NA
Goal P-PMP 5. Child develops knowledge and skills that help promote nutritious food choices and eating habits.	NA	NA	NA
Goal P-PMP 6. Child demonstrates knowledge of personal safety practices and routines.	NA	NA	NA

Table 4.48: Goals observed during the observations in the Perceptual, Motor, and Physical Development domain

4.6.2 Phase 2: Survey

To complement the data that emerged from using the Head Start Framework to code field notes of the children's behaviors while attending storytimes, the survey included a question to understand the storytime providers' perceptions of what the children are learning while attending their storytimes. The answers included types of learning across a variety of subjects. In addition, the storytime providers had the options to indicate that 1) they were unsure about the types of learning that were occurring in their storytime, or that 2) they did not feel any learning was occurring in their storytime. They were also provided with a fill-in option to indicate other types of learning that they perceived to be occurring in their storytimes.

Overall, storytime providers indicated that they felt a variety of learning was occurring for young children in their storytimes. Across the 68 respondents, they selected an average of 5.94 types of learning. Two storytime providers indicated that they were unsure about the types of learning that were occurring in their storytime. None of the storytime providers indicated that they did not feel any learning was occurring in their storytime. Five storytime providers indicated other types of learning that they felt were occurring in their storytimes. These included: awareness of other children with differing abilities, observation skills, appreciation of different art choices in picture books, and sign language.

Types of Learning	Percentage of responses	Number of responses
Early literacy concepts and skills	96%	65
Behavior in a group setting	96%	65
Gross and fine motor skills	90%	61
Social and emotional concepts and skills	84%	57
Storytime and Library Rules and Routines	77%	52
Executive function and self-regulation skills	75%	51
Early math concepts and skills	71%	48

Early science concepts and skills	53%	36
Cultural Learning	38%	26
Other languages	25%	17
Digital literacy skills	0%	0

Table 4.49: Types of learning storytime providers feel are occurring in their storytimes

4.7 Conclusion

This chapter presented data that emerged from observations of twenty video-recorded preschool storytimes and a survey of storytime providers in Washington state. This data helped to uncover some of the information aspects of storytimes in order to provide an understanding of the information environment offered by storytimes. More specifically, the data helped to provide an understanding of the following:

- nature of the information resources and information content,
- ways that storytime providers are communicating information,
- roles of the individuals attending storytimes, and
- types of learning behaviors exhibited by the children while attending storytime.

In conclusion, the data revealed that storytime providers are incorporating a wide variety of information resources and information content. They are communicating this information content using a variety of modes as well as incorporating opportunities in which children can interact with the information using a variety of modes. In order to support the information communication and interaction, each type of individual attending storytime plays a variety of

roles and interacts with the other types, helping to sustain the information environment. Finally, while interacting with the various information aspects, children are exhibiting a wide variety of learning behaviors during storytime.

Chapter 5: Discussion

This research study was designed and conducted to focus on a particular informal learning environment—the public library storytime—to better understand the information aspects of informal learning environments and how they might relate to learning for young children. This exploration is important because research has demonstrated that children undergo a significant amount of learning and development in their first five years of life (Gopnik, Meltzoff, & Kuhl, 2001), and yet there is no formal education requirement for this age group. As a result, children ages 0-5 are exposed to vastly different experiences in concepts and subjects and the support they are given. In addition, because there is no formal education requirement for this age, children often spend their time in a variety of different environments (Laughlin 2013), many of which may be informal learning environments. Informal learning environments can support learning for young children in powerful ways because they often work to encourage learning through a fun, engaging, and hands-on manner (Howard 2013). However, because they do not use a formal curriculum and because limited research has examined how they support young children, we do not have a clear understanding of the types of learning or areas of content that they are emphasizing.

Having an understanding of the types of learning and subject matter that young children are exposed to is important because research has demonstrated that there are certain types of knowledge and skills that contribute to school readiness, which in turn can contribute to engagement in lifelong learning. Most scholars acknowledge that children need to be exposed to knowledge and skills across five domains: approaches to learning, social and emotional development, language and literacy, cognition, and physical and motor skills. In addition, Cross

and Conn-Powers (2011) reviewed relevant school readiness research and highlighted the relationship between the following knowledge and skills and school achievement.

A. Strong predictor of achievement
    a. Emergent math skills
B. Predictor of achievement
    a. Attention skills
    b. Early literacy skills
    c. Fine motor skills
C. Uncertain predictor of achievement
    a. Internalizing & externalizing behavior
    b. Social skills

Due to the fact that informal learning environments do not follow any types of formal curriculum it can be difficult to identify how, if at all, they are supporting these various types of learning for young children. However, because some scholars have characterized information as the foundational building block for learning (Neuman, 2011), exploring the information aspects of an environment can help to provide some understanding of the learning opportunities provided by that environment.

Again, the purpose of this research was to explore the information aspects, and the broader information environment, of public library storytimes and the learning behaviors that are occurring for children while interacting in this space to understand the learning opportunities that public library storytimes are providing for young children. Each specific research question was

explored through observations of twenty public library preschool storytimes taken from a previous study and a subsequent survey of storytime providers in Washington State.

In order to understand the information aspects, and the broader information environment, provided by public library storytimes, this study endeavored to answer the overall research question:

How do individuals and information interact to create learning experiences for young children in storytime?

The specific research questions were:

1) What is the nature of the information content and information resources used in storytime?
2) How do storytime providers communicate and share information with the children and adults attending their storytimes?
3) What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?
4) What types of learning behaviors are the children exhibiting while attending storytime?

The first three research questions were derived from a framework developed by Eisenberg and Small (1993) to characterize the information base for learning. Their framework identifies three dimensions of an information base: information resources, information processes, and the roles of the players (1993). The first three research questions map to these three dimensions of an information base in order to guide the research in exploring significant information aspects of the

environment. In addition, a fourth research question was added to explore the types of learning behaviors that children are exhibiting while interacting in the environment.

The results from the research were presented in the previous chapter. This chapter reviews and discusses the major findings. The discussion is organized around each specific research question, with a final discussion focused on the overall research question.

5.1 What is the nature of the information content and information resources used in storytime?

The purpose of research question 1 was to provide an understanding of the information content and information resources found in storytime. This research question corresponded with the first dimension of the information base as described by Eisenberg and Small (1993). If information is a foundational building block for learning (Neuman, 2011), it follows that discovering the types of information content and information resources provided in storytime will provide insight into the learning opportunities provided for young children. For the purposes of this study, information resources were defined as items (tangible and intangible) that were created outside of storytime and used by the storytime provider in storytime (see figure 5.1). Information content was defined as content, communicated by the storytime provider to the children and adults, that the storytime provider emphasizes and sometimes extends by adding their own knowledge (see figure 5.1).

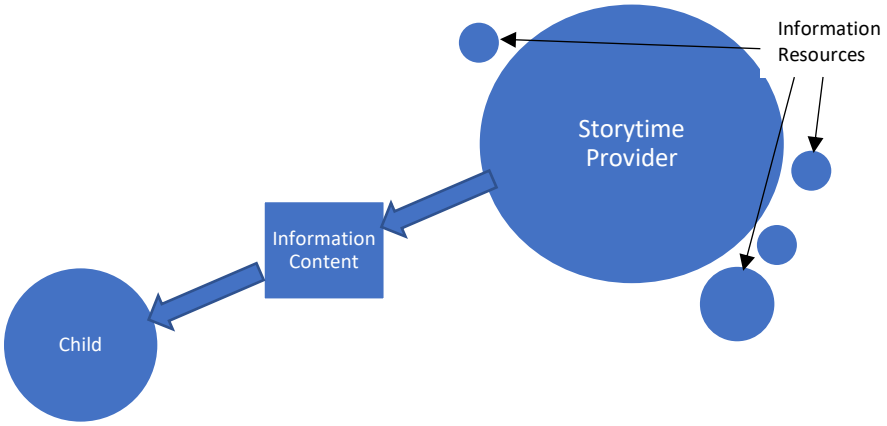


Figure 5.1: Position of information resources and information content in storytime

Analysis of the observations of secondary data and survey revealed that storytime providers are incorporating a wide variety of information resources. Of all of the resources included, the storytime providers themselves actually serve as the most important and frequently incorporated resource in that they deliver the content of information resources, such as when they read a book or sing a song. They also take on the role of an information resource by adding their own knowledge and background experience to highlight and extend aspects of the information resource. Beyond themselves, storytime providers use other types of information resources in the storytime elements. In particular, flannel or white boards, puppets, and props were used across several of the storytime elements in storytime (i.e. reading, singing, activities, etc.).

The frequent use of these information resources is important because it speaks to the multimodal nature of storytime. When the storytime provider serves as the information resource, it is because they are verbalizing the content of the resource, such as reading a book or singing a song. Therefore, they are serving as a verbal form of the resource. The other types of information

resources they are frequently incorporating help to provide visual aspects that complement the verbal content of the information resource.

The analysis also demonstrates that storytime providers are incorporating a wide variety of information content in their storytimes. Some of the information content aligns with the knowledge and skills that have been identified as important for school readiness, for example, storytime providers are incorporating a wide variety math content, which was identified by Cross and Conn-Powers as a strong predictor for later academic achievement (2011). Furthermore, the specific types of math content identified in the storytimes went beyond the skills included in their review, which were knowing the list of number names (counting), one-to-one correspondence, and the number of items on a group. Storytime providers were incorporating content across all of these skills, and went further to incorporate content on number identification, shapes, directionality, measurement, and more. The incorporation of these math skills also aligns with libraries' goal of supporting literacy as these early math skills were found to support later literacy learning (Duncan et al., 2007). These findings suggest that storytimes are providing a variety of opportunities for children to be exposed to math content and helping to support the possible acquisition of math knowledge and skills that are important for later academic achievement.

Another predictor of later academic achievement identified by Cross and Conn-Powers is attention skills (2011). While attention skills were not identified in the observations because they are difficult to operationalize a definition for and to observe, they were touched on in the survey by allowing the storytime providers to indicate if they encourage executive function and self-

regulation skills in storytime. Executive function and self-regulation skills are the "mental processes that enable us to plan, focus attention, remember instructions, and juggle multiple tasks successfully" (Center on the Developing Child, n.d.). A majority of storytime providers reported encouraging executive function and self-regulation skills, which suggests that they are supporting attention skills in storytime. Furthermore, attention skills are possibly being encouraged throughout storytime when children are prompted to attend to specific things, asked questions about content, and asked to shift their attention during transitions to new activities, and these were all present in the observations.

Language and reading skills were additional predictors of school achievement identified by Cross and Conn-Powers (2011). Previous research has demonstrated that storytimes are encouraging and supporting early literacy skills for young children (Campana et al., 2016; Becker, 2012; McKenzie and Stooke, 2007; McKechnie, 2006). The data from the observations and survey support the findings of this previous research by demonstrating that storytime providers are incorporating a variety of early literacy content. The most prevalent types of early literacy content incorporated, as discovered by the observations and survey, were comprehension, background knowledge, vocabulary, letter knowledge, phonological awareness, and print concepts. This variety is important because while the National Early Literacy Panel identified letter knowledge and phonological awareness as important predictors for later reading success (NELP 2008), Teale et al. (2010) suggest a broader focus so that other early literacy skills, such as comprehension, vocabulary, and oral language skills, which also contribute to and help to sustain later reading success, are not neglected.

The final predictor of school achievement as identified by Cross and Conn-Powers was fine motor skills (2011). Because information content doesn't support fine motor skills, none was found in the observations. However, because movement and writing are ways that children can interact with information, fine motor skills were found when coding for the methods of information interaction.

Cross and Conn-Powers also identified two uncertain predictors for later school achievement: internalizing and externalizing behavior and social skills (2011). While these skills may be uncertain predictors for school achievement, they are an important part of child development and everyday life. In addition, internalizing and externalizing behavior is actually related to the executive function and self-regulation skills discussed above (Rice, 2012). The observations and survey found that some storytime providers are incorporating information content on emotions and feelings and social norms and situations, which suggests storytimes are providing some support to help children learn about appropriate behavior and social norms and situations. However, the lower percentages of storytimes including this type of information content also suggests there is room to improve by being more intentional about incorporating information content related to emotions, behavior and social norms and situations.

This research examined information resources and information content in isolation, but it is also important to recognize that there is often a relationship between the two. More often than not, the information resources and information content were related in that the storytime provider used an aspect of the resource to help connect to the information content they wanted to deliver. This was seen in the observations when, for example, the storytime provider counted something in a

picture in a book and invited the children to count with her. Similarly, the storytime provider might put letters on the flannel board and talked about the letter name and the letter sound. In both of these examples, the storytime provider connected the information resource and information content through the ways that they share information.

To summarize, storytime providers incorporate a wide variety of information resources and information content to help support school readiness and lifelong learning for young children. The findings from research question one provide insight into the nature of information in storytime and suggest the presence of an information environment in storytime by establishing the first dimension of an information base for learning (Eisenberg and Small, 1993). In relation to school achievement, analysis of the data revealed that storytimes encourage important predictors for later academic achievement identified by Cross and Conn-Powers (2011). Finally, the research revealed a relationship between the information resource and the information content, in that the storytime provider often uses the resource as a foundation for delivering the information content.

5.2 How do storytime providers communicate and share information with the children and adults attending their storytimes?

The purpose of research question two was to understand how storytime providers communicate and share information with children and adults attending storytime, which in turn reveals some of the information processes that are occurring in storytime. Understanding the information

processes provides insight into the second dimension of the information base as identified by Eisenberg and Small (1993).

The theory of multimodality also plays a role in research question two by helping to highlight the variety of ways that storytime providers communicate and share information. The theory of multimodality calls attention to all of ways that people communicate rather than only placing an emphasis on the spoken aspect of communication. This is done by identifying the various modes by which individuals communicate (Kress 2000), such as verbally, visually, and movement.

In order to provide a top-level understanding of how storytime providers are communicating and sharing information with the children and adults attending their storytime, the research coded broad, common elements that occurred across storytimes. The common elements that were found are reading/storytelling, singing, saying chants/rhymes, activities, and talk types (introductory, theme, craft, caregiver tips). While the elements of storytime strongly emphasize the verbal aspect of communication, there are some differences in the types of verbal communication present, because talking, reading aloud, singing, and saying rhymes/chants are very different ways of communicating information.

The multimodal nature of storytime emerged when analyzing the variety of ways that storytime providers communicate and share information within the different storytime elements. When analyzing the communication of information within the different elements of storytime, the ways that storytime providers were sharing information were classified into two different types: information transfer and information interaction. Information transfer was defined as a one-way

communication of information, usually from the storytime provider to the child or caregiver (figure 5.2). Information interaction was defined as a two-way communication of information. The storytime provider communicated the information to the children and provided opportunities for them to interact with the information and communicate it back out into the storytime space using various modes (figure 5.2), such as reading, movement, acting things out, and singing.

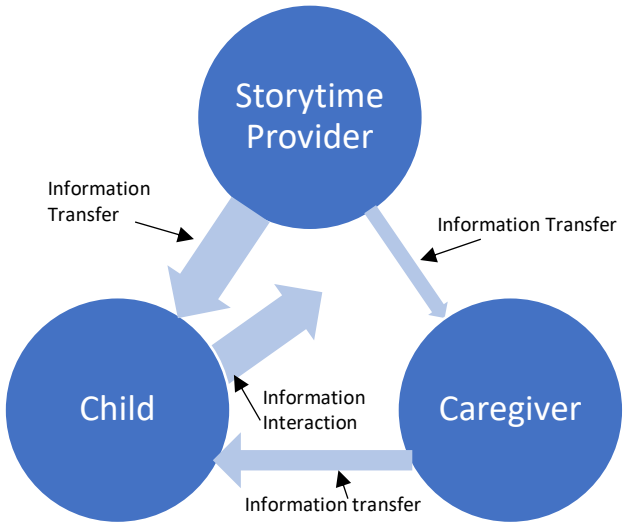


Figure 5.2: Role of information transfer and information interaction in storytime

The observations and survey revealed that storytime providers are incorporating a number of modes for information transfer. Many of the information transfer modes were found to be the same across the twenty storytimes, suggesting that storytime has developed its own common modes of communication that have been shaped through the broader cultural and social practices (Jewitt 2008). In addition, classifying the information transfer modes in each storytime element as auditory, visual, or kinesthetic helped to demonstrate that each element of storytime offers a variety of the three types of modes by which children are exposed to information. This multimodal nature of each storytime element is important because individuals are more likely to

learn something they are exposed to it across a variety of circumstances (Bransford, Brown, & Cocking, 2000).

The observations and survey also revealed that storytime providers are incorporating a wide variety across the three types of modes that allow children to interact with the information content. Providing opportunities to interact with the information is vital because children learn best when they are mentally active and engaged (Hirsh-Pasek et al., 2015). The modes for information interaction were a bit more diverse across the storytimes than the information transfer modes. As a result, it may be that, unlike information transfer, storytime has not yet developed common modes of information interaction that have been shaped through the broader cultural and social uses. It is possible this is because the interactive elements of storytime have not been present as long. Historically, storytimes were comprised of performative elements that offered a one-way communication of storytime (Albright et al 2009).

Using the same three categories of modes (auditory, visual, and kinesthetic) to examine the modes of information interaction in each storytime element helped to demonstrate that each storytime element offers a variety of the three types of modes for children to interact with the information that is communicated to them during that element. For example, children are invited to answer questions based on the content or illustrations in a book or they are prompted to pretend or act out specific concepts that are presented in a book or rhyme. Providing opportunities to interact with information through a variety of ways is crucial for supporting learning for young children as researchers have begun to view children's learning as a social

process where children learn by interacting with and experiencing a variety of meaning-making processes (Flewitt 2013; Stooke and McKenzie, 2009)

While the data revealed a variety of modes occurring in the elements of the traditional storytime, such as reading or singing; it is possible that there are additional modes of information transfer and information interaction occurring in the add-on elements. The add-on elements were extra components that are typically added on the beginning or end of storytime to extend the experience, such as craft or playtime. The research revealed a wide range of add-on elements that offer a range of different experiences and emphasize a variety of concepts and skills. Due to the limitations of the video-recordings, these add-on elements were not able to be observed. However, due to the hands-on nature of most of these add-on elements, there is a strong possibility that they provided additional, diverse ways for children to be exposed to and interact with information.

In summary for research question two, storytime providers are communicating and sharing information with children and caregivers using a variety of modes. Furthermore, they often combined these modes to create a multimodal communication of information. The data uncovered in research question two, around the communication and sharing of information, provides an understanding of the nature of information communication in storytime and establishes the second dimension of an information base for learning (Eisenberg and Small, 1993), further suggesting the presence of an information environment.

5.3 What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?

The purpose of research question three was to understand the roles played by individuals attending storytime. Research question three provides insight into the roles of the players which Eisenberg and Small (1993) identify as the third dimension of the information base. The three types of the individuals attending storytime are the storytime provider, the children, and the caregivers. The observation and survey data reveal that the three types of individuals attending storytime all play a variety of roles which support the production of storytime (figure 5.3). This supports the work done by McKenzie, Stooke, and McKechnie (2007) who found that the library staff, children, and caregivers all participate in a community of practice to "contribute to the enactment of storytime as a social space" (2007, p. 10).

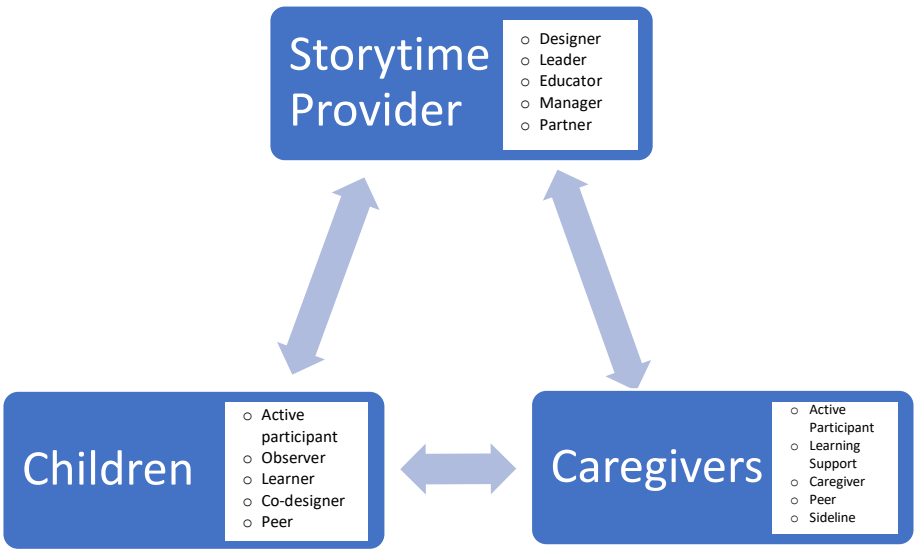


Figure 5.3: Roles of each type of storytime attendee

In order to "contribute to the enactment of storytime," each type of storytime attendee interacts with the other types around various aspects of storytime. The different roles help to support the connections between each type of attendee. Many of the roles that the children and caregivers are performing stem from the actions and roles of the storytime provider. When the storytime providers play the roles of designer, leader, educator, and manager, the children often respond by taking on the roles of an active participant, observer, learner, and co-designer. The caregivers often respond to these same storytime provider roles by taking on the roles of active participant, learning support, and sideline. The storytime provider and caregivers also connect when the storytime provider plays the role of partner by asking the caregivers to help or support them in something. The connections between all of these roles help to support the successful enactment of storytime.

In addition to connections between the storytime provider and the children and caregivers, connections between the children and caregivers also contribute to the enactment of storytime. By taking on the role of learning support and caregiver, the caregivers make connections with the children and contribute to the enactment of storytime through emotional support, behavior management, and modeling and scaffolding in the storytime elements. Finally, when playing the peer role both the children and the caregivers create connections with their peers helping to support and enrich the storytime community.

Along with supporting the "enactment of storytime", the different roles adopted by each type of storytime attendee, along with the connections between them, contribute to the sustainability of

the information base for learning in storytime. These roles support the communication and flow of information from each individual to the other attendees. The identification of these roles, played by each type of attendee, establishes the third dimension of an information base for learning (Eisenberg and Small, 1993).

In summary, storytime provider, children and caregivers are all playing a variety of roles while attending storytime. Each type of attendee interacts with the others while playing a variety of different roles. The interactions of these different roles help to contribute to the sustainment of the information environment and ultimately support the "enactment of storytime as a social space".

5.4 What types of learning behaviors are the children exhibiting while attending storytime?

The main purpose of research question four was to understand the different types of learning behaviors that are occurring for children while attending storytime. This was done using the SEALE tool, which is based on the Head Start Early Learning Framework, to code the children's behaviors during the observation, and by including a survey question that addresses the storytime providers' perceptions of the learning occurring for young children while attending their storytimes. The SEALE tool covers behaviors across five domains of learning and development for young children: Approaches to Learning, Social and Emotional Development, Language and Literacy, Cognition, and Perceptual, Motor, and Physical Development. In addition to the different types of learning behaviors occurring in storytime, the discussion will also touch on the suitability of the SEALE tool for uncovering learning behaviors in storytime.

The data that emerged from the use of the SEALE tool revealed that children are demonstrating a wide variety of learning behaviors across the five domains. Across the sub-domains in each of the five domains, there are many goals that were observed across a majority of the storytimes, and some goals that were observed in only a few storytimes. However, there were a few sub-domains where a majority of the goals were observed in only a few storytimes. The sub-domain of Creativity was only observed in a few storytimes. It is possible this is due to the structured nature of storytime. The structure of storytime often doesn't allow for children to apply their own creativity to the process. It is possible that some of the add-on elements, such as block play and art, are allowing children to apply their own creativity. However, it could also be important to explore if there are ways to alter the structure of storytime to provide opportunities for children to incorporate their own creativity.

Another sub-domain that was not observed in as many storytimes was the sub-domain of Sense of Identity and Belonging. The goals in this sub-domain are related to the child's understanding of themselves as a unique individual, their confidence in themselves, and their sense of belonging to their family, culture, and broader community. Helping children to develop a sense of identity and confidence and a sense of belonging to their culture and community is important as it contributes to their emotional development and provides them with the confidence they need in order to successfully operate in an academic environment as well as everyday life. Therefore, it is important to be intentional about incorporating activities that support this. Storytime providers can easily incorporate activities that support a sense of identity and belonging by providing periods of open discussion where children can talk about themselves, their likes and

dislikes, and similarities and differences between them and their peers. They can also provide activities that highlight the cultures that exist within their community, as well as other aspects of the community.

Two other sub-domains, under the Mathematics Development domain, that were not observed in as many storytimes were Operations and Algebraic Thinking and Measurement. Because mathematics was identified as a strong predictor for later academic achievement (Cross and Conn Powers 2011), it is important to expose young children to a wide variety of math skills prior to entering school. It is possible that storytime providers were incorporating these skills in storytimes outside of the ones that were observed. In addition, with the more recent emphasis on STEM it is possible that additional math skills are being incorporated into current storytimes. Regardless, it is important for storytime providers to be intentional with the variety of math skills given their importance for academic achievement. To support this, there should be professional development opportunities offered for storytime providers to help them understand how to incorporate a variety of math skills in developmentally appropriate and engaging ways.

The final sub-domain that was not observed in as many storytimes is Reasoning and Problem-solving under the Scientific Reasoning domain. The Reasoning and Problem-solving sub-domain deals with the hands-on aspects of scientific experimentation. It includes developing questions that could be answered through experiments, carrying out the experiments, and drawing conclusions. Providing opportunities to engage with scientific concepts and inquiry is important for early childhood as it prepares children with a foundation to explore scientific concepts when they enter school (Trundle 2010). While the storytime providers did incorporate information

content on science concepts, they did not offer opportunities to engage in scientific inquiry. This may be due to the structure of storytime, which currently does not allow for periods of scientific inquiry. It is possible that certain add-on elements, such as STEM activities or block play, are providing opportunities for scientific inquiry. However, the content and structure of storytime could also be altered to provide scaffolded opportunities for scientific inquiry where the storytime provider leads the group in a play-based scientific inquiry exercise.

The data from the survey revealed that storytime providers perceive that children are learning a variety of types of knowledge and skills while attending their storytimes. The only types of knowledge and skills that were not indicated by a majority of the respondents were cultural learning, other languages, and digital literacy skills. This may be because the focus on these topics in public library programming for young children has only arisen relatively recently (Mills et al. 2015; Campbell 2017). Because of this, the adoption in programming may not be widespread and storytime providers may not understand how to support or identify these types of learning.

In addition to uncovering the types of learning behaviors exhibited by young children in storytime, the use of the SEALE tool in this project was also done to understand its suitability for determining learning outcomes for young children in storytimes and other library programs. Informal learning environments have previously struggled with understanding how to evaluate their programs and understand what young children are learning while interacting in these programs. To do this they need a tool, ideally applicable at a national-level, that can be used to

determine the learning outcomes across multiple domains of learning and development for young children while attending their programs.

Because the SEALE tool is based on the Head Start Early Learning Framework, it is nationally applicable and it provides indicators for determining children's learning behaviors across five domains of child development. While the tool did successfully uncover learning behaviors in library storytimes, there are goals and indicators that are not suitable for use because of the differences between the nature of formal learning environments and informal learning environments. The Head Start Early Learning Framework was developed through the lens of a formal learning environment for young children, which can be structured differently than informal learning environment. As a result, in its current form, it is not fully suitable for use informal learning environments. To be made suitable, the indicators that stem from the Head Start framework could be used as the base of the tool. The non-relevant indicators could be eliminated and indicators that are more relevant for informal learning environments could be developed that are based on research and developmental theories.

In summary, while the SEALE tool uncovered a wide variety of learning behaviors occurring for children while attending storytime, there are still some areas where storytimes could grow to support children's learning and development. In addition, even though the SEALE tool was used successfully to uncover learning behaviors occurring in storytime, it needs further development to be fully applicable to informal learning environments.

5.5 How do individuals and information interact to create learning experiences for young children in storytime?

The purpose of the overarching research question was to determine how all of the storytime attendees and information interact to form an information environment in which young children can interact with information to encourage and support their learning. Research questions one, two, and three all help to inform how individuals and information are interacting to form an information environment for young children. Because each research question maps to a dimension of the information base for learning as described by Eisenberg and Small (1993), examining the three research questions together should provide insight into the information environment provided for young children in storytime. In addition, examining the fourth research question along with the first three research questions provides an understanding of the types of learning behaviors the young child is exhibiting while interacting with the information environment as described through the first three research questions. This helps to further inform how the young child is interacting with information in order to create a learning experience for themselves.

In order to understand the nature of the information environment provided by storytime, it is important to understand how the smaller components that make up storytime are contributing to the information environment. As the findings in Chapter 4 revealed, there are common types of storytime elements occurring across storytimes. Storytime providers are turning these storytime elements into multimodal information experiences for the children by incorporating a variety of ways for them to interact with information included in each element.

5.5.1 Multimodal information experiences

The observations revealed that the information environment provided by storytime is made up of multimodal information experiences where children are provided with opportunities to interact with information content in a variety of ways. Storytime providers are often designing their storytime elements to deliver information content and provide children ways to interact with the information content through a variety of modes. The multimodal nature was revealed when the modes were examined through the lens of the three different types of modes: auditory, visual, and kinesthetic. Many of the storytime elements incorporated a variety of information transfer and information interaction modes, across the three types, to deliver information content, in essence creating a multimodal information experience. One way in which information content was combined with the three types of modes for information transfer and information content to create a multimodal information experience can be seen in the example below.

The storytime provider says to the children, "we are going to start by having a paint cup" and holds out her hand cupped. "And I want you all to imagine what color is in this paint cup. On the count of three we are all going to say what color is in our paint cup." She holds up her fingers while she counts "one, two, three". The children yell out different colors. She waves her hand and smiles and nods, "beautiful, that is very nice" and laughs. "All right can we all go like this?" and she wiggles her fingers while bringing her hand around to her mouth to hold her lips closed. And then puts her finger in front of her lips. "I heard all of your colors. Now we are going to paint some letters." She puts a felt A on the flannel board. "Anybody know what that is?" The children say "A." Then the storytime provider says, "we are going to use our paint brush hand," and she holds her hand up high. "Last time I forgot the water, right? We have

water colors so let's dip our paint brush in water." She pulls her hand down and swirls it around like she is dipping her paint brush in water. "Then we are going to dip it in our beautiful paint color that we said" and she pulls her hand over and puts it in the hand that is being the paint cup. "We are going to draw a big letter A. Let's do it together. We are going to do a capital A. It's a big point up and a big point down and a line in the middle." She models painting a big A in the air for them, using whole body movements. "So that's our A, right? Let's do a B next." She puts a felt B on the flannel board. "We are going to do a B. Let's dip our paint brush back in. We are going to do a big line up and two bumps around and that's a B." While she is talking she dips her paint brush hand back in her paint cup hand and paints a big B in the air using whole body movements. Then she puts a felt C on the flannel board. "Now we are going to do a C. Are you ready? C is a big…" A child says "you forgot to add water." She says, "oh I forgot to add water. Thank you for reminding me." She swirls her paint brush hand in the imaginary water and then in the paint. "We are going to do a big C. All the way around, as big as you can do." She paints a big C in the air. "What's the next one? After a C?" The children say "a D". She then asks, "should we do a D? To do a D we do a big line up and a big line around," and she paints a big D in the air.

"Now let's do this rhyme. Are you ready? We are going to start with A. A is for…" When she says A she is painting the shape in the air like before. A child says "you forgot the water." She goes back and dips in water and then repaints it. "A is for alligator, chomp, chomp, chomp." When she chomps she claps her hands together in front of her like alligator jaws. Kid says "and for apple." She says "and for apple. You are right. Let's do B next. BBBB is for ball." She drags out the letter B. While she is saying it, she paints B in the air and then puts her hands together

above her head to make a circle. "Bounce, bounce, bounce. Can you bounce like balls?" When the children are bouncing they are jumping up and down. A child says "B is for Bear." She says "yes, just like hugless Douglas. And then we are going to do the C. C is for circle" She paints the C in the air and brings her hands together in front of her to form a circle. She says "turn, turn, turn" and turns in a circle. A child says "and for cat." She says "and for cat, yeah. And then we are going to do a big D. D is for dizzy so we all sit down." She paints out a D and then puts both hands on her head and sits down. The children say "and dog." She says "and dog. Does anybody else have any D words? Maybe Douglas? Like Hugless Douglas right here?" and she points to the book standing up on the table next to her. "Does anyone see any other Ds on the table here? There's one right here." And she points to something on a book cover. "And there's a D right there for dinosaur". She points to a book at the end of the table.

The example above provides insight into the nature of a multimodal information experience. The storytime provider is incorporating information content related to letter knowledge and phonological awareness, both important predictors for later reading success (NELP 2008). She communicates the information content using auditory, visual, and kinesthetic modes. She uses an auditory mode by communicating information to the children when talking about the names of the letters, their sounds and shapes, and the words that start with that letter. She uses a visual mode when she places the felt letters on the flannel board for the children to see and when she is acting out the concepts in the rhyme. She uses a kinesthetic mode when she gestures and paints the letters in the air.

In addition to communicating information through a variety of modes, the storytime provider also provides a variety of ways for the children to interact with the information content. The storytime provider incorporates opportunities for the children to interact with information using an auditory mode when they repeat the rhyme with her and offer other words that start with the same letter. The storytime provider incorporates opportunities for children to use a visual mode when she asks them to pretend to have a paintbrush and paint color for when they are pretending to paint in the air. Finally, the storytime provider offers opportunities to use a kinesthetic mode by having the children use gross motor movements to paint the letters in the air and to do the movements with the rhyme.

In this one activity, children are able to interact with the information content related to letter knowledge and phonological awareness through hearing about it, seeing it, verbalizing it, and moving their bodies with it, ultimately providing the children with a multimodal information experience. Many of the storytime elements across the twenty storytimes were providing similar multimodal information experiences by combining information content with a variety of information transfer and information interaction modes. These multimodal information experiences are what help to form the information environment provided by storytime.

5.5.2 Information environment

The purpose of mapping research questions one, two, and three to the three dimensions of an information base offered by Eisenberg and Small's Information-based Education framework was two-fold. The first purpose of mapping the first three research questions to the Information-based Education Framework was to determine the information environment provided for young children by public library storytimes. The second reason was to determine if the framework

could be used to successfully characterize the learning opportunities provided by storytime. Because storytimes and other programs in informal learning environments typically do not use a standard curriculum, they struggle to demonstrate how they are supporting learning for young children. The successful use of the Information-based Education Framework would provide a way to characterize the learning opportunities provided by these programs. Both of these objectives will be discussed below.

The data from research questions one, two, and three reveal that storytimes are providing a rich information environment that provides a variety of learning opportunities for young children. Figure 5.4 shows how all of the information aspects uncovered in each research question fit together to form the information environment. The storytime provider is a crucial piece of the information environment as they are responsible for creating the environment. They design the environment by choosing information resources to include and finding ways to incorporate information content that support a variety of types of learning for young children. Furthermore, they create an engaging environment by sharing information through a variety of modes and providing children with a variety of modes through which they can interact with the information. Finally, each type of storytime attendee plays an important role in helping the information to continue to flow around the environment. Each type of attendee also contributes to the effectiveness of the information environment by participating and actively adding to the information that is shared in the environment. Often, this is done by the storytime providers and caregivers to enrich and support the learning experience for the children.

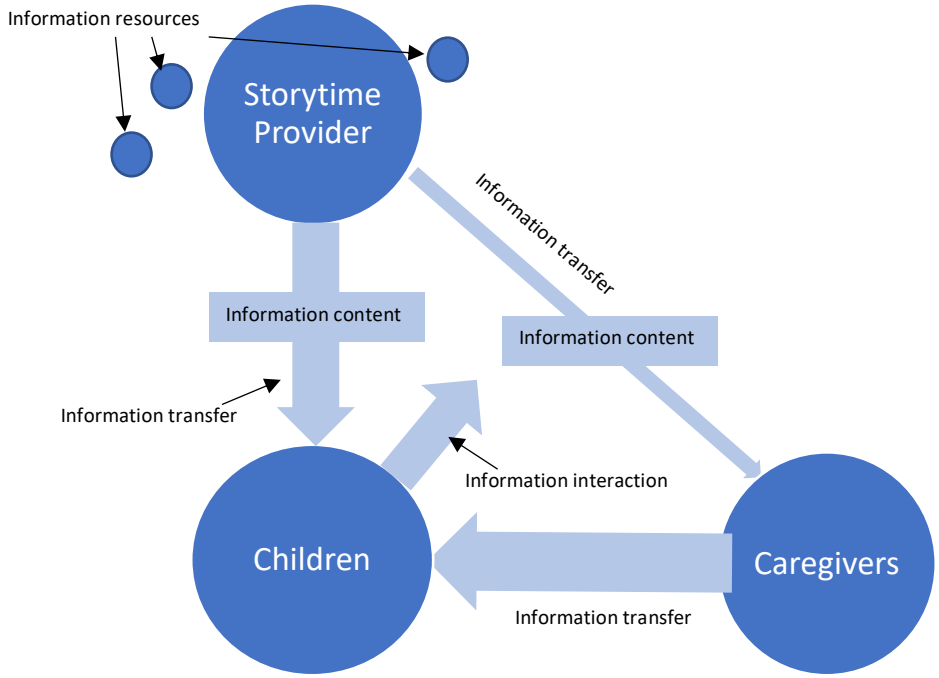


Figure 5.4: The information environment provided by storytime

The use of the Information-based Education Framework was successful in helping to characterize the information environment provided by storytime and the learning opportunities that it provides for the young children who attend. The three dimensions of the information base helped to provide an understanding of the characteristics that come together to form the information environment. However, because of the differences between learning in formal and informal environments, there are a few changes to the framework that could be considered in future uses. In their article, Eisenberg and Small (1993) identify the information resources, information processes, and roles of the players as the main dimensions of an information base. They go on to identify the following sub-dimensions, or attributes, of an information base:

- Information resources

- Information skills
- Information transfer
- Computer technology
- Nature of information
- Instructional methods.

While the simplicity of the tripartite framework is appealing for broad portrayals of information environments, actual characterizations of information environments require additional layers of detail. To do this, the framework could be expanded to incorporate some of the sub-dimensions identified by Eisenberg and Small, as well as others. Based on the observations in this study, one possible expansion, for use with programs for young children in informal learning environments, could be to identify the dimensions of the information base as information resources, information content, information transfer, information interaction, and the roles of the players (see figure 5.5).

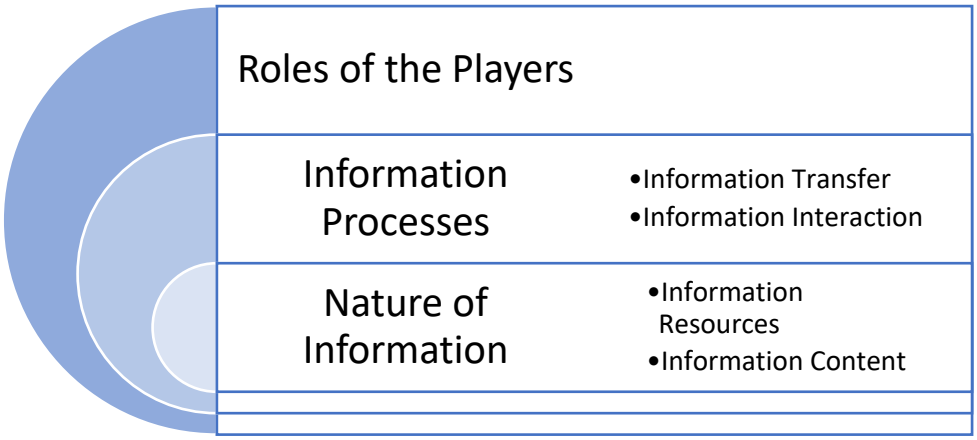


Figure 5.5: Dimensions for exploring the information environment of storytime

While these dimensions are highly applicable to storytimes, research needs to be done to explore the dimensions present in other types of programs offered in informal learning before arriving a definitive set of dimensions for use in characterizing the information environments offered by informal learning environments.

5.5.3 Connections between information environment and learning behaviors

The final aspect that needs to be examined with regards to the information environment provided by storytime is the connections between the nature of the information environment and the types of learning behaviors that are occurring for children while interacting in the information environment. Because of the nature of the data collection methods there is no way to correlate the learning behaviors with the information environment at this time. However, examining the nature of the information content and information interaction alongside the types of learning behaviors children are exhibiting should provide some insight into the types of learning that storytimes might be encouraging for young children. Because the SEALE tool mostly highlights behaviors across the literacy, math, science, social and emotional, and physical development and learning, the discussion will focus in on these areas.

The observations and survey revealed that storytime providers are incorporating a variety of literacy-related information content across a majority of storytimes. The SEALE tool uncovered corresponding literacy concepts occurring in the children's behaviors so it is possible that the children's behaviors are stemming from when they are interacting with literacy-related information content.

Information content uncovered in observations and survey	Learning behaviors uncovered in observations using SEALE tool
• vocabulary • letter knowledge • phonological awareness • print concepts • comprehension • background knowledge • oral communication	• vocabulary • letter knowledge • phonological awareness • print concepts • comprehension • oral communication

Table 5.1: Literacy information content and learning behaviors uncovered in the observations and survey

The observations and survey also revealed that storytime providers are incorporating a variety of math-related information content across a majority of storytimes. The SEALE tool uncovered some corresponding math concepts occurring in the children's behaviors so it is possible that the children's behaviors are stemming from when they are interacting with corresponding math-related information content. Some of the math concepts observed and uncovered in the survey did not have corresponding concepts observed in the children's behaviors but this may be somewhat due to the limited set of math indicators included in the tool.

Information content uncovered in observations and survey	Learning behaviors uncovered in observations using SEALE tool
• one-to-one correspondence • counting • direction/positioning • size/measurement • numbers • addition/subtraction	• one-to-one correspondence • counting • direction/positioning • measurement • numbers • addition/subtraction

• comparisons • patterns • shapes • sequencing • weight • estimation	• comparisons • patterns

Table 5.2: Math information content and learning behaviors uncovered in the observations and survey

The observations and survey also revealed that storytime providers are incorporating a variety of science-related information content across a majority of storytimes. In addition, the SEALE tool uncovered some indicators related to scientific reasoning occurring in the children's behaviors. However, the concepts uncovered in the information content do not correspond with the indicators observed in the children's behaviors because of the differences between the structure of the SEALE tool and the structure of storytime. The SEALE tool focuses more on the hands-on aspects of science and the video-recorded storytimes in the study did not include time for hands-on experiences with scientific inquiry.

The observations and survey revealed that storytime providers are incorporating some social and emotional-related content. In addition, the roles that the storytime provider, children, and caregivers play while in storytime provide the children with opportunities to practice with emotional and social skills. The SEALE tool uncovered a variety of indicators related to social and emotional skills occurring in the children's behaviors so it is possible that the children's behaviors are stemming from when they are interacting with corresponding social and emotional-related information content and when they are interacting with the storytime provider, caregivers, and other peers attending storytime.

Finally, the observations and survey revealed that storytime providers are incorporating ways for children build gross and fine motor skills while interacting with information content. In addition, the SEALE tool uncovered some corresponding indicators related to gross and fine motor skills occurring in the children's behaviors so it is possible that the children's behaviors are stemming from when they are using gross and fine motor skills to interact with information content.

Overall, there are several similarities between the types of information incorporated in storytime and the types of learning behaviors that are children are exhibiting while in storytime, suggesting that the children are responding to and learning from the information included in storytime.

5.6 Conclusion

This study sought to elucidate the nature of an information environment offered for young children by storytimes and the learning behaviors they are exhibiting while interacting in the environment. To do this the study answered the following research questions:

1) What is the nature of the information content and information resources used in storytime?
2) How do storytime providers communicate and share information with the children and adults attending their storytimes?
3) What types of roles do the storytime providers, children, and parents/caregivers perform while attending storytime?
4) What types of learning behaviors are the children exhibiting while attending storytime?

The research revealed that storytime providers are incorporating a wide variety of information resources and information content. In addition, the research revealed that the storytime providers are communicating information content and providing opportunities for the children to interact with the information using a variety of modes. As explained in this chapter, some of the types of information content and modes of information interaction intersect with the knowledge and skills identified as predictors for later academic success, suggesting that public library storytimes are playing a role in preparing children to be ready for school.

The research also revealed that each type of storytime attendee is playing a variety of roles while attending storytime. Each type of attendee often interacts with the other types while performing the different roles, ultimately helping to support and sustain the enactment of storytime. In addition, the research revealed that while children are demonstrating a wide variety of learning behaviors while attending storytime, there are some areas in which children are not exhibiting as many learning behaviors, suggesting there are still some areas for growth in encouraging a variety of learning opportunities in storytime.

Finally, the research questions above helped to inform the overarching research question: How do individuals and information interact to create learning experiences for young children in storytime?

Looking at all of the research questions together helps to answer this overarching research question. The individuals in storytime are interacting with information to transform the storytime

elements into multimodal information experiences where children are exposed to information content and offered a variety of ways to interact with the information content. The multiple multimodal information experiences offered in storytime work together to create a rich information environment that helps to encourage and support learning for the children who attend.

Chapter 6: Conclusion

This study explored the information aspects, or information environment, provided by public library storytimes in order to understand how storytimes are supporting learning for young children through the information and information supports they provide. To do this, the study utilized the Information-based Learning framework developed by Eisenberg and Small (1993). The framework identifies three dimensions of an information base for learning: information resources, information processes, and the roles of the players.

The findings reveal that storytimes are providing these three dimensions of information base for the young children who attend. Storytime providers incorporate a wide variety of information content and information resources; and they communicate the information to the children using a variety of methods while also providing the children with multiple ways that they can interact with the information content and resources. In addition to the storytime provider playing a variety of roles, the children and adults also take on their own roles which all help to contribute to the enactment of the information environment in storytime. Finally, through the use of a coding tool based on the Head Start Early Learning Framework, the data revealed that children are exhibiting learning behaviors across a variety of domains for learning and child development. Ultimately, these findings reveal that storytimes are providing a rich information environment for young children that encourages and supports their learning in a variety of ways.

This final chapter will cover the contributions of this research and its findings across the following areas: theoretical, empirical, methodological, practice, and pedagogical. The

limitations of the research will also be discussed. The chapter will conclude by exploring future areas for research that emerged from this study.

6.1 Contributions

This research project offered contributions across the following areas: theoretical, empirical, methodological, practice, and pedagogical.

Theoretical

This study offers contributions to several theoretical areas. By elucidating the nature of the information environment and the learning occurring at storytimes, this research has provided further insight into foundational relationship between learning and information. Having research that supports and expounds on this relationship is important as it helps to highlight and emphasize the important role of information within the education and learning sciences fields. In addition, the application of the information base framework to an informal learning environment in this research provided an increased understanding of the relationships between the information environment offered in informal learning environments and the curriculum offered in formal learning environments, leading to a better understanding of the connections between informal and formal learning environments for young children. This study also has contributed a greater understanding of the multimodal nature of storytimes and the learning that occurs for children while attending, helping to further extend the application of the theory of multimodality into early learning and informal learning environments.

Empirical

This research offers several empirical contributions. First, this study adds to the body of knowledge around storytimes by demonstrating that storytimes and storytime providers are

providing information environments that 1) incorporate a variety of information content and resources; 2) provide information through different types of modes and offer an assortment of modes in which children can interact with information; and 3) require each type of attendee to play different roles to support the enactment of the information environment and of storytime.

This study also reveals that storytimes are more than just early literacy spaces. While storytimes are often thought of places for early literacy learning, this study reveals that they incorporate a sizeable amount of math skills, science topics, and motor skills. They are incorporating these topics and skills using multimodal means of information transfer and information interaction. Furthermore, this study contributes the understanding that, while attending storytime, children are exhibiting learning behaviors across several domains of learning and child development.

This study also speaks to the abundance of learning opportunities that are provided by storytime and other informal learning environments. Because informal learning environments typically do not follow a standard curriculum, there is no limit to the variety of topics and concepts they include or the ways in which the topics are incorporated and communicated. In addition, the findings in this study reveal the power that multimodality can bring to informal learning environments for children.

Finally, this study contributes to the limited body of work that explores the relationship between information and learning by demonstrating that there are some loose connections between the information content incorporated in storytime and the learning behaviors children are exhibiting

while attending storytime. Additional research is needed to continue to explore and provide further insight into the complex relationship between information and learning.

Methodological

This study offers a few different methodological contributions. First, the use of secondary data as the core data set helps to establish the powerful role that secondary data analysis can play in library and information science. In addition, this research helps to support the use of the Information-based Learning framework (Eisenberg and Small, 1993) as a method to describe and understand the educational environments provided by informal learning environments, which typically do not follow a standard curriculum. Finally, while the SEALE tool needs some alterations and revisions, it does provide a base from which a set of early learning behaviors can be built for use in understanding the learning that is occurring for children in group settings. Given that most informal learning environments do not track or assess individual children, having a set of learning behaviors based, in part, on the Head Start Early Learning Framework provides a method that can be used across the nation to understand the learning occurring for young children in these environments.

Pedagogical

This research offers a few contributions to pedagogy. Up to now, many library school classes for children's librarians have focused on preparing student to serve young children by teaching them to evaluate and select literature and to design programs that support early literacy. This research helps to demonstrate that storytime providers are doing so much more than just supporting early literacy and therefore need curriculum that helps them understand how to support learning for young children across a variety of domains of learning and child development.

This research also demonstrates that storytimes have become fun, engaging, learning spaces that provide multimodal information experiences and information environments that get children actively involved in a variety of topics and concepts. To help aspiring children's librarians with creating these information experiences and environments that encourage active involvement, curriculum needs to focus on helping students learn to be intentional and interactive with their storytime planning and delivery. Using the dimensions of the information environment of storytime as a guide, curriculum can help students learn to be intentional about 1) the information content and information resources they incorporate, 2) the ways they communicate and share information, 3) the ways that they incorporate interactivity and encourage children to interact with the information, and 4) the ways they cultivate the roles of the storytime attendees and encourage them to interact with each other.

Practice

In terms of practice, this research contributes to a deeper understanding of the library's role as an informal learning environment for young children and provides a better understanding of the information environment and learning outcomes provided by storytimes at the public library. Having this understanding is important for libraries, library administrators, and storytime providers, as well as informal learning environments more broadly, to demonstrate their value in the early learning ecosystem. Providing information on the various modes in storytimes and the learning occurring as a result helps storytime providers, as well as other informal learning practitioners, begin to understand the importance of multimodal learning for early childhood.

In addition, this research provides a greater understanding of the learning behaviors occurring for children across multiple domains of child development and learning, helping to demonstrate the

different types of learning that storytimes offer outside of literacy. The somewhat successful use of the SEALE tool to understand the learning outcomes emerging from storytime provides the first step towards a framework that can be used to determine learning outcomes of individual storytimes across the nation. Furthermore, the use of the Head Start framework as the foundation of the SEALE tool helps to align storytimes with other Head Start programs, offering additional support for the library's meaningful role in early learning and providing another bridge between formal and informal learning environments.

6.2 Limitations

All research has limitations, and this study was no exception. While every effort was made to conduct the research in valid and reliable ways, both the methodology and conceptualization and operationalization of the phenomena being studied carried certain limitations. The limitations will be discussed across these two areas.

Methodology

The methodologies used in this study held a few limitations. While the analysis of secondary data offered many benefits in this study, it also brought some limitations. The secondary data set used in this study is from a previous study and as a result the storytime videos are a few years old. Therefore, the findings that emerged from the observations may not fully represent current practice. In addition, because of the nature of the previous storytime, the videorecordings were limited to the traditional storytime and did not include any add-on elements, such as craft or play time. As a result, the observations could not provide a clear understanding of the add-on elements that are present or the nature of the information aspects that are incorporated in them.

The observations of the secondary data used in the study also carried a few limitations. In order to cover a wider variety of libraries, only one storytime was observed from each of the libraries included in the previous study. Because storytimes can vary wildly from week to week, it is possible that the observation of each single storytime did not accurately reflect the nature of the storytimes at each library. In addition, because the storytimes were videotaped, the observation was limited to only that which was in the camera range during the videotaping.

The survey used in the study also carried some limitations. First, surveys are limited to only those who choose to respond, so the data described here may not provide an accurate, holistic picture of storytimes. In addition, because the observations were in Washington state, the survey was also limited to Washington state, therefore the findings reported in this study may not be representative of storytimes in other states.

Conceptualization and Operationalization

There were a couple of limitations with the conceptualization and operationalization of exploring both storytime as an information environment and the learning behaviors that occur for children while interacting in the information environment. Because of the limited research in storytime and the fact that the concept of an information environment had not yet been explored, terminology for different aspects of storytime and the information environment had to be created and defined as part of the observations and then applied with practitioners in the survey. As a result, there may have been some misinterpretations around the various terminology in the survey, which would mean that the data from the survey may not be fully reflective of current storytime practice. Finally, the use of the SEALE tool may not capture all of the learning behaviors that are occurring in storytime due to the fact that it was based on the Head Start Early

Learning Framework, which was created for use with formal learning environments and caregivers.

Looking forward

There are ways to control for these limitations in future research. Observations could be done of current storytimes where the traditional storytime piece and any add-on elements are both observed. Observations could be done of more storytimes in fewer libraries to better understand the regular nature of storytime. The researcher could do in-person observations along with the videotaping in order to understand what might be missed in the videotapes. Finally, to ensure that the survey is representative of states outside of Washington, the survey could be administered nationwide.

6.3 Future research

This research starts to address gaps in the literature with regards to storytime and establishes the concept of an information environment and its importance for the learning and development of young children. This data from this research study reveals some directions for future research in storytime, other library programs for children, and other informal learning environments and information environments.

Storytimes, other library programs, and other informal learning environments

There are many directions for future research in storytimes and other library programs for children due to the limited research that has been done to date in these environments. However, the data from this study revealed a few specific directions for future research.

The SEALE Tool

One area for future research that needs to be explored is the further refinement of the SEALE tool for use in determining learning outcomes in storytime, other library programs, and other informal learning environments for young children. As mentioned in Chapter 5, the SEALE tool needs further refinement for use in informal learning environments. Non-relevant indicators need to removed and research needs to be done to determine what is not captured by the current indicators. In addition, this study was only the first step in determining its suitability for use in storytimes. Research needs to be done to determine the suitability of the tool in the variety of other programs that are offered for young children in informal learning environments, such as STEM, movement, and art programs. Having a tool that can help to determine outcomes across the different types of programs for young children offered in informal learning environments is crucial given the immense pressure informal learning environments face to demonstrate the outcomes and value they provide for the community.

Add-on Elements of Storytime

The survey results from this study revealed that many of the respondents are incorporating add-on elements along with their traditional storytime to extend and deepen the learning experience. Because of the limits of the secondary dataset, it was not possible to observe any of the add-on elements that were present with the VIEWS2 storytimes. As such there is not a clear understanding of the structure of these elements and the outcomes that occur for the children who attend. Research needs to be done that explores the nature of these add-on elements, how they are structured, the knowledge and skills they encourage, and the outcomes that occur for children who attend. In addition, because this research focused solely on Washington state

research needs to be done that explores to what extent these add-on elements are occurring in other states and on a national level.

Family Engagement

The observation and survey results reveal a need for further research into the family engagement aspects of storytime. This topic is especially important given the Public Library Association's (PLA) focus on family engagement (Lopez, Caspe, & McWilliams, 2016). Many public library programs are ideal for family engagement because the caregiver is present in the program. However, besides some occurrences of providing early learning tips or encouraging caregivers to participate, there was limited interaction between the storytime provider and the caregivers in the observations. While the respondents to the survey reported interacting with caregivers, there needs to be additional research that examines these interactions and the frequency and nature of them.

Through the Every Child Ready to Read initiative (Neuman & Celano, 2010; Meyers & Henderson, 2004), public libraries have been recognizing and supporting caregivers as their child's first and most important teacher which ties directly into family engagement. Because caregivers are present in many library programs for young children, these programs are the perfect location deepening the library's engagement with caregivers and helping them learn to support their child's learning. To build on this, research needs to explore how storytimes and other library programs are supporting, mentoring, and modeling for caregivers, and how these efforts can be increased, to help them learn how to be effective with supporting learning for their child.

Finally, because family engagement is still an emerging area in children's librarianship, research needs to be done to understand what library-initiated family engagement looks like in and outside of the library. Initial work in this area has been done by PLA and the Global Family Research Project (Lopez, Caspe, & McWilliams, 2016). However, because much of their data was based on surveys and interviews, there remains a need for observations done in library spaces and programs to determine what constitutes family engagement with children and their families. In addition, research needs to be done with the families to understand what they want from the library and how they want the library to engage with them.

Technology

The data from this study revealed that 32% of the respondents are using technology in their storytimes. This finding aligns with the research done by ALSC in 2015 looking at new media use in libraries. 39% of their respondents reported using new media in storytimes (Mills et al. 2015). Given that technology use by our society has only increased, it is interesting that use in storytimes appears to have remained stable. However, given that this research focused solely on Washington state while the ALSC survey was nationwide, it is important to understand the occurrence of practices nationwide to determine whether use has increased, decreased, or remained stable. This research is currently being done by ALSC as they are preparing to administer an updated version of the survey.

To build on this research, additional research could be done to gain a deeper understanding of the use of technology in library programs for young children. This research could explore the use of

technology in library programs—how it is being used and for what purpose, the storytime provider's attitudes towards use and how, if at all, that impacts their actual use, the barriers to use, and how families feel about the inclusion of technology in library programs for young children.

Information Literacy

The data from this study revealed that storytimes are incorporating content, such as sequencing, narrative, and communication, that is related to early information literacy skills. Because of the abundance of information in our society, information literacy skills are important for success with learning in school and life. Many children are taught information literacy skills in formal education but are there ways that public library programs for young children can and should be preparing those who attend for formal information literacy instruction? A future direction for research could be to explore how, if at all, public library programs for young children are encouraging and supporting early information literacy skills. In addition, if these programs are supporting early information literacy skills, research could explore how these programs could align with information literacy efforts in schools to hopefully increase their impact and better prepare children to learn information literacy skills in the formal education environment.

Information Environment

This research serves as the first step for developing and describing the concept of an information environment for young children and its role in their learning and development. Future research needs to be done to continue to develop this concept and the relevant dimensions that can help to inform and characterize the nature of the information environment provided by different informal learning environments.

Information Environment in Storytime and Other Library Programs

While this research revealed the nature of the information environment provided by storytime, the central findings emerged from a secondary dataset that was a few years old and located within one state. While this secondary dataset was supplemented by a survey to bring it into current practices, research still needs to be done of current storytimes in other states and nationwide to understand the nature of the information environment provided storytime. By doing observations of current storytimes, the add-on elements could also be included to provide an understanding as to how, if at all, they change the nature of the information environment provided by storytime.

Along with storytime, libraries offer a variety of other programs for young children. Research should be done to explore the nature of the information environment offered by those programs and the similarities and differences to that offered by storytime. It could help to determine if the Information-based Learning (Eisenberg and Small 1993) is applicable and what, if any, changes need to be made to the framework in order to holistically characterize the information environments provided by public library programs for young children.

Information Environment in Other Informal Learning Environments

The research described here helps to characterize the nature of the information environment provided for young children by public library storytimes. However, in order to gain insight into the nature of the information ecosystem in which a child interacts we need to have a better understanding of the information environments provided by other informal learning

environments in which children exist. To gain this understanding, research should be done with programs in other informal learning environments in which young children exist. Some examples of other informal learning environments in which young children exist are zoos, aquariums, museums, community centers, Gymboree, Kindermusik, playgroups, and digital spaces.

Research could be done that explores the applicability of the Information-based Education framework (Eisenberg and Small, 1993) for characterizing the nature of the information environment found in other informal learning environments. This could help to contribute to a better understanding of nature of each individual information environment a child might interact in as well as providing insight into their information ecosystem, or the combination of what they are exposed to throughout their everyday life. In addition, this research could help to provide greater insight into similarities and differences between informal learning environments that serve young children and the role that each plays in supporting learning for young children and their caregivers.

Information Environment for Other Ages

In addition to examining the information environment in other programs in informal learning environments offered for young children, a need also exists to understand what type of information environment programs are offering for school-age children. Based on the idea that information is the foundation for learning, it is possible that programs for school-age children are providing information and ways to interact with it for the children who participate in them. Similar to programs for young children, programs offered for school-age children in informal learning environments typically do not use a formal curriculum so there is not a clear

understanding of what these programs emphasizing or how they are supporting learning for the children who attend.

Research into the nature of the information environment offered by programs for school-age children could provide greater insight into the nature of an information environment for older children as the structure is going to change somewhat given their developmental progress. The Information-based education (Eisenberg and Small, 1993) could be used to understand how, if at all, it applies to programs for older children and the prominent dimensions that emerge when characterizing the environment. Finally, this research could provide a greater understanding of the role of informal learning environments in a child's learning by revealing: 1) the nature of the learning opportunities provided by informal learning environments and the impact of the children; 2) any connections to curriculum offered by formal environments; 3) how informal learning environments are complementing and extending concepts learned in formal environments; and 4) how informal learning environments are providing learning opportunities in areas that fall outside of formal curriculum.

6.4 Conclusion

The first five years of a child's life are crucial for their learning and development (Gopnick, Meltzoff, & Kuhl, 2001). Given the high percentage of children who enter school not fully prepared (Isaacs, 2012), our society needs to address how to support children and families during this time period of a child's life to help children be better prepared for learning in school and in life. While some families can afford preschool or are able to get a spot at a Head Start center, many families are not so they are often left with alternative forms of care (Laughlin 2013) that may not effectively support and encourage learning for their child. Because of this disparity in

care, informal learning environments can and should be playing a role to support learning for all children during this period, helping to prepare them for learning in school and life.

To understand how public libraries, one informal learning environment, support learning for young children through storytimes--the cornerstone of their programming for young children, this study endeavored to understand the nature of the information environment provided for the young children who attend. The research revealed that storytime providers are incorporating a wide variety of information resources and content that align with the knowledge and skills identified as important for later school achievement. In addition, the storytime providers were communicating and encouraging children to interact with the information through a variety of modes, demonstrating the multimodal nature of storytime. Finally, while interacting in the information environment provided by storytime, children were found to be exhibiting a wide variety of learning behaviors across multiple domains of learning and development, some of which align with the information content and the knowledge and skills that are crucial for later academic achievement.

Ultimately, these findings, along with previous research, help to demonstrate the importance of storytimes and public libraries in supporting learning for young children and their families (Mills et al, 2018; Neuman, Moland, & Celano, 2017; Campana et al, 2016; McKenzie, Stooke, & McKechnie, 2007; McKechnie, 2006). Researchers should build on this growing body of work to continue to demonstrate the importance of informal learning environments for young children's learning and development. Libraries and practitioners should use this emerging body of research to advocate for the essential work they are doing to reach and serve all young children and

families with regards to learning in school and in life; and to demonstrate that learning can be fun, hands-on, and play-based--helping to encourage a love of learning that will hopefully stay with the children throughout their lives.

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DETERMINATION OF EXEMPT STATUS

March 6, 2017

Kathleen Campana
kcampana@uw.edu

Dear Kathleen Campana,

On 3/6/2017, the University of Washington Human Subjects Division (HSD) reviewed the following application:

Type of Review:	Initial Study
Title of Study:	The Multimodal Power of Storytime: Exploring an Information Environment for Young Children
Investigator:	Kathleen Campana
IRB ID:	STUDY00001489
Funding:	None

Exempt Status

HSD determined that your proposed activity is human subjects research that qualifies for exempt status (Category 1).

- This determination is valid for the duration of your research.
- This means that your research is exempt from the federal human subjects regulations, including the requirement for IRB approval and continuing review.

If you consider changes to this activity in the future and know that the changes will require review (or you are not certain), you may request a review or a new determination by submitting a Modification to this application.

Thank you for your commitment to ethical and responsible research. We wish you great success!

Sincerely,

Katy Sharrock
IRB Review Administrator
sharrock@uw.edu
206-616-7426

UNIVERSITY OF WASHINGTON
THE INFORMATION SCHOOL
PROJECT VIEWS2: VALUABLE INITIATIVES IN EARLY LITERACY THAT WORK
ADULT CONSENT FORM – LIBRARIAN – EXPERIMENTAL STUDY
(PRIMARY PARTICIPANTS)

Investigator (UW, The Information School):
Dr. Eliza T. Dresang, Beverly Cleary Professor, (**206) 543-0169**,
edresang@u.washington.edu

INVESTIGATORS' STATEMENT
We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether or not to participate. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When all your questions have been answered, you can decide if you want to participate in the study or not. This process is called 'informed consent.'

PURPOSE

The purpose of this study is to understand how different librarian strategies used during story times facilitate children's early literacy activity within informal early learning environments. We want to know more about how to enhance children's early literacy activity.

PROCEDURES

In the beginning of this study, we will also ask you to complete a brief survey and an online questionnaire. Then we will observe and video record a few of your story times over the next two years. Portions of the video will be analyzed to better understand how the strategies you used during your story times impacted children's early literacy activity. We will also ask you to complete some online training in the fall or spring of the second year. Finally we will ask you to complete a survey at the end of the study.

RISK, STRESS, OR DISCOMFORT

You might feel uncomfortable having your story time observed for the purposes of a study. You might be concerned that your strategies will be shared with other people. We have procedures in place for securing and preventing unauthorized access to the videos that were taken during our observation (as described under "Other Information" below). Only authorized researchers for this project who have signed an agreement to maintain your privacy and confidentiality will have access to the videos.

BENEFITS

We hope this study will contribute to a fuller understanding of how informal learning environments facilitate early literacy skills in groups of children. You and the children in your story time may or may not directly benefit from this study.

OTHER INFORMATION

Participation in this study is voluntary. At any time during the study you may choose to stop participating.

Confidentiality of data will be maintained at all times, except in cases where child or elderly abuse is suspected. By law, such instances must be reported by the investigator. Only members of the research team who have signed an agreement to maintain your privacy and confidentiality will have access to identifiable data. Government or university staff sometimes review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your records may be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

All data will be kept indefinitely in a secured location accessible only to project researchers. Verbal anecdotal description of the videos could be published with research findings in academic journals and professional publications. However, your name or any personally identifiable information will not be used in any publication or presentation. While there are no plans to use the data from this study in future studies, the researchers may decide to use the data in a future study if the data is relevant to the future study.

If you have any questions about your rights as a subject, call the Human Subjects Division at 206-543-0098. If you have any questions about the purpose of the research or what we will ask you to do, email Dr. Dresang at edresang@uw.edu or phone her at 206 543 0169.

_____	_____	_____
Printed name of investigator	Signature of investigator	Date

SUBJECT'S STATEMENT

The details of this study have been explained to me, and I voluntarily consent to my participation in the study. I have had an opportunity to ask questions. I understand that the researchers listed above will answer future questions that I may have about the research. If I have questions about my rights, I may call the University of Washington Human Subject Division at (206) 543-0098. I will receive a copy of this consent form.

I have read the above and give my consent to participate in this study.

_____	_____	_____
Printed name of participant	Signature of participant	Date

Contact Information Sheet

If you are willing to participate in our study please fill out the brief contact information below so that we can contact you regarding your participation in our study.

Name: _____

Email: _____

Telephone Number: _____

Preferred method of contact:

☐ Email

☐ Phone

Please note that we cannot guarantee the confidentiality of email communications.

UNIVERSITY OF WASHINGTON
THE INFORMATION SCHOOL
PROJECT VIEWS2: VALUABLE INITIATIVES IN EARLY LITERACY THAT WORK SUCCESSFULLY
ADULT INFORMATION STATEMENT FOR CHILD - BCPAF
(PRIMARY PARTICIPANTS)

Investigators (UW, The Information School):
Dr. Eliza T. Dresang, Beverly Cleary Professor, (206) 543-0169,
edresang@u.washington.edu

INVESTIGATORS' STATEMENT
We are asking you to allow your child to be in our research study. The purpose of this statement is to give you the information you will need to help you decide whether or not to participate. Please read the statement carefully. You may ask questions about the purpose of the research, what we would ask your child to do, the possible risks and benefits, your and your child's rights as a volunteer, and anything else about the research or this statement that is not clear. When all your questions have been answered, you can decide if you want to participate in the study or not. This process is called 'informed consent.'

NOTE: By choosing to attend the story time you are giving permission for your child to be observed and video recorded during the story time. Therefore, you do not need to sign or return this form. It is for your information

PURPOSE

The purpose of this study is to understand how different librarian strategies used during story times facilitate children's early literacy activity at the group level within informal early learning environments. We want to know more about how to enhance children's early literacy activity.

PROCEDURES

In this study, we will observe and video record the children's activity during story time. We will videotape for the duration of the story time. The videotape will be analyzed in terms of children's early literacy skills at the group level to better understand how educator strategies impact what children are learning.

RISK, STRESS, OR DISCOMFORT

You might feel uncomfortable having your child observed and videotaped for the purposes of a study. You might be concerned about your child's video recorded talk and actions being shared with other people. We have procedures for securing and preventing unauthorized access to the data and video-recordings that were collected during our observations (as described under "Other Information" below). Only authorized researchers for this project who have signed an agreement to maintain yours and your child's privacy and confidentiality will have access to the data and videos.

BENEFITS

We hope this study will contribute to a fuller understanding of how informal learning environments facilitate early literacy skills in groups of children. You and your child may or may not directly benefit from this study.

OTHER INFORMATION

Participation in this study is voluntary. At any time during the study you may choose to have your child stop participating.

Confidentiality of data will be maintained at all times, except in cases where child or elderly abuse is suspected. By law, such instances must be reported by the investigator. Only members of the research team who have signed an agreement to maintain your and your child's privacy and confidentiality will have access to identifiable data. Government or university staff sometimes review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your records may be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

All data, including audio and video recordings, will be kept indefinitely. The video and audio recordings will be kept in a secure location accessible only to project researchers. Verbal anecdotal descriptions of the videos could be published with research findings in academic journals and professional publications. However, neither your name nor your child's name or any other personally identifiable information will be used in any publication or presentation. While there are no plans to use the data from this study in future studies, the researchers may decide to use the data in a future study if the data is relevant to the future study.

If you have any questions about your rights or your child's rights as a subject, call the Human Subjects Division at 206-543-0098. If you have questions about the research or what your child is being asked to do you can contact Dr. Eliza Dresang at edresang@uw.edu or 206-543-0169.

_____	_____	_____
Printed name of investigator	Signature of investigator	Date

UNIVERSITY OF WASHINGTON
CONSENT FORM
Exploring Storytime as an Information Environment

Principal Investigator: Kathleen Campana
kcampana@uw.edu

University of Washington Information School, 980-298-2848

Advisor: Allyson Carlyle, Ph.D.

RESEARCHERS' STATEMENT

I am asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent." You may print or save a copy of this form for your records.

PURPOSE OF THE STUDY

The purpose of this study is to help the researcher to understand the information environment that is provided for young children by storytime and the learning that occurs as a result.

STUDY PROCEDURES

Your participation involves you completing the following survey about your storytimes and 1) the information content and information resources included in your storytime; 2) the ways that you share information in storytime; 3) the roles you expect storytime participants to play; and 4) the learning that you work to encourage and that you think is occurring for children attending your storytimes.

RISKS, STRESS, OR DISCOMFORT

This research is considered minimal risk, though you may be uncomfortable about sharing your storytime goals, expectations, practices, and beliefs. I will keep each individual's responses confidential. I will not disclose which libraries were represented or who did or did not participate in the study.

BENEFITS OF THE STUDY

This study is expected to help library stakeholders better understand the information environment provided by storytimes and the learning that occurs as a result. Interviewees will not necessarily directly benefit from being in this study. Results may be used to demonstrate the learning environment provided by storytime and to develop a framework for characterizing that environment.

CONFIDENTIALITY OF RESEARCH INFORMATION

Data from this study will be confidential. I will remove participant names or other identifiable information from the survey responses. Through 2018, I may keep a separate document that links names or other identifiable information to transcripts.

Government or university staff sometimes review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your records may be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

OTHER INFORMATION

You may refuse to participate and you are free to withdraw from this study at any time without penalty or loss of benefits to which you are otherwise entitled. The researchers may contact you in the future for follow-up reasons, clarification purposes, or to invite you to participate in another portion of the ongoing research.

All data will be kept indefinitely in a secured location. The researchers may also use the data for future research and publications.

If you have questions about your rights as a research study participant, you can call the University of Washington Human Subjects Division at (206) 543-0098.

If you have questions about the research, or if you later feel that you have been harmed by participating in this study, please contact Katie Campana at kcampana@uw.edu or 980-298-2848.

Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions.

I would like to complete the survey.

- (•) Yes. I have read the above and give my consent to participate in this study.
- ( ) No. I choose not to participate in this study.

[If a participant clicks 'Yes' to consent above they will be taken to the survey in Catalyst, if 'No.' they will go directly to the closing "Thank you" and submit responses page on Catalyst].

Storytime Provider Code System

Codes	Memo
Sign Language	SP incorporates sign language into storytime
Time	incorporates information on time, clocks, or telling time
Alike/different	Asks kids how some things are alike or different
Speed	SP introduces concepts related to speed such as fast and slow
Art	SP includes content related to art. This does not include the actual craft but can include information on art tools or art process
Opposites	SP provides information on opposites
Patterns	SP incorporates patterns or information about patterns
Sound	SP incorporates information on or concepts related to sound such as loud or soft
Other cultures	SP provides info on other cultures, including words from foreign languages
Weather	SP provides content on weather
Daily Routines	SP provides information about things that would be included in a child's daily routine such as going to bed, bath, dinner time
Print Concepts	SP provides information on print concepts such as title page, illustrator, what author and illustrator do, that we read print from left to right - just author's name does not qualify
Sequencing	When storytime provider encourages kids recite a list of something in the specific order it happened in
Weight	Content on weight of items
Counting syllables	When provider has the children counting syllables in words
Human body	identifies or includes information on body parts or on the human body and how it works
Alphabetic Knowledge	SP includes information about letters including their shapes and being able to identify them
Nature	SP includes content about nature
Info on library programs	shares information on other library programs
Shapes	SP includes information on shapes
Vocabulary	SP incorporates an understanding of what a word is/means by defining/asking the children to define it or provides a visual picture of it
Food	SP shares information about food
Tools	Where storytime provider talks about a tool
1-to-1 correspondence	when caregiver holds up fingers or objects to demonstrate number she is talking about
Plants	Where information is provided on plants or food that is grown on a plant
Phonological Awareness	SP emphasizes the sounds of letters and words
Buildings	SP includes information on buildings and building parts such as doors, windows, chimneys
Families	information about families
Animals	When storytime provider provides information about animals
Numbers	When SP emphasizes recognizing the number and what it stands for
Social Information	SP provides information on appropriate social interactions
Emotions	Provider talks about or demonstrates emotions (sad, happy, mad)
Storytime Rules and Routine	Provider incorporates information or asks kids about: 1) storytime routine, or 2) rules of storytime or storytime activities
Directions	Provider discusses or demonstrates direction words or concepts (right, left, up, down)
Colors	content on colors

Estimation		When storytime provider asks them to estimate the number of something
Addition/Subtraction		When storytime provider asks how many they will have when they take something away
Size/Measurement		when storytime provider talks about the size of something (big or small, tall or short, etc) or demonstrates a concept related to size or measurement (such as volume)
Counting/Number order		When storytime provider leads children in counting in a sequence (1, 2, 3, 4, etc)
Writing Names		When storytime provider provides children with opportunities to write their names on nametags as its own part of storytime
Conversation talk		time when SP talks with kids outside of books, songs, activities
	Acts things out	SP acts something out to demonstrate for the children
	Engaging background kr	SP asks questions to engage what children already know (i.e. what would we take to the ocean? What animal is this?)
	Pretend/Imagine	SP encourages children to pretend or act something out (i.e. can you knock on the door with me? Let's pretend we are going to the ocean)
	Relate to life	When SP tries to relate the subject content to the children's lives (do you have a dog at home? Have you ever been to the ocean?)
Caregiver handout		when storytime provider provides handouts for caregivers with extra information to take away from storytime
Behavioral Talk/Directions		When provider talks to kids about behavior at storytime
	Acts something out	SP acts things out to demonstrate concepts or ideas
Caregiver tip Talk		when SP provides a tip for caregivers about learning and development or things to do with their children
Craft Talk		when provider is talking to children about craft they are going to do
	Engaging background kr	When SP asks questions to get children to answer based on current knowledge
Singing		Anything where the song is an integral part of the activity - the lyrics are sung or the children are following the prompts in the lyrics
	Images	SP uses images to supplement an activity that are not a part of a book or a flannel board, such as cards with a story or pictures or letters/numbers.
	Prediction	SP asks children to predict what happens next in song
	Welcome/goodbye song	song storytime providers sings at beginning of storytime
	Music	When SP plays background music
	Flannel board	SP uses the flannel board as part of the story, song, activity
	Following rhythm	SP prompts children to follow rhythm by using different motions such as clapping, stomping, patting
	Awareness and interacti	SP prompts them to interact with or helps to build an awareness of their peers
	Props/Puppets	When SP uses props
	Book	SP sings the lyrics to a book
	Fine motor movement	SP includes movement that incorporates fingers and hands
	Song	When SP sings lyrics
	Pretend/Imagine	Asks children to pretend or act out something or to imagine something
	Gross Motor Movement	
Leading Chant or Rhyme		Spoken lyrics that have rhyming words
	Prediction	SP asks them to predict something
	Flannel board	SP uses a flannel board to help tell the rhyme, story, or song
	Identifying pictures/iten	SP asks kids to identify pictures or other items
	welcome/goodbye chan	SP leads a hello chant at beginning of storytime

	Filling in words	SP asks children to fill in a word in something she is leading, such as rhyme, song, story
	Modeling for peers	asks children to model for their peers
	Props	When SP uses a prop
	Rhyme	When SP recites a chant that rhymes
	Pretend/Imagine	Asks children to pretend or act out something or to imagine something
	Fine Motor Movement	Provider includes movement that involves fingers and hands
	Gross Motor Movement	
Activity		
	Manipulatives	Storytime Provider incorporates manipulatives (shakers, scarves, etc) for the children to use in the activity.
	Puppet	SP uses a puppet in storytime
	Fine motor movement	Provider includes movement that involves fingers and hands
	Following the rhythm	SP encourages kids to follow the rhythm
	Engaging background kr	SP asks them questions that requires them to use background knowledge
	Props	SP uses props in story, song, or activity
	Acts something out	SP acts something out or does hand motions to demonstrate a concept
	Flannel board	SP uses flannel board to help with activity
	Guessing/Identification	Where provider and children go back and forth in guessing or identifying something
	Parachute	provider uses a parachute
	Bubbles	When provider blows bubbles
	Music	when provider plays music in the background or sings but it is not an integral part of the activity
	Awareness and interacti	prompts the children to interact with each other
	Gross Motor Movement	Any movement that uses the arms, legs, or torso
	Pretend/Imagine	Asks children to pretend or act out something or to imagine something
Reading/Storytelling		When storytime provider reads a book
	Puppet	SP uses a puppet
	recall previous content	SP asks kids to recall prior parts of the story
	Acts something out	SP acts something out to help communicate it to children
	Uses voice or facial expr	SP changes to voice or makes facial expressions to communicate something
	question about content	SP asks questions about content that is not asking for a prediction or describing a picture
	identifying words	SP prompts kids to identify words in text
	Filling in words	SP prompts kids to fill in words
	Flannel board	SP uses flannel board to help tell story, rhyme, or song
	Book	When SP reads a book
	Engaging background kr	When SP asks questions to get children to answer based on previous knowledge
	Prediction	provider asks children to predict future events
	Gross Motor Movement	Provider incorporates movement that uses the arms, body or legs
	Relate to life	when storytime asks them to relate something to their life
	Pretend/Imagine	Asks children to pretend or act out something or to imagine something
	Repeating text	Storytime provider prompts children to repeat repetitive parts of the text
	Describing Pictures or ite	
	Props	Provider uses real life items to act out something
	Hypothesis	Provider asks children to make a guess based on real-life situations

Theme Talk		When storytime provider is talking at attendees to introduce storytime theme.
	Acts something out	SP acts something out
	Describing Pictures or Ite	SP asks children to identify or describe pictures or an item
	Pretend/Imagine	Asks children to pretend or act out something or to imagine something
	Awareness and interacti	SP encourages kids to interact with others attending storytime
	repeating words	SP asks children to repeat words after her
	recall previous content	SP asks children to recall something from earlier in the storytime
	Open discussion	SP lets the kids talk to her in an unstructured manner
	Prop	SP uses a prop
	Engaging background kı	When SP asks questions to get children to answer based on previous knowledge
	Prediction	asking children to make a guess based on current situation
	Relating to life	Provider relates something in storytime to their lives
Introductory Talk		When storytime provider is talking at the attendees to welcome them to storytime or introduce new activities
	Puppet	SP uses a puppet in storytime
	Engaging background kı	
	Spelling Names	asks kids to identify letters in their name or to spell their names
	Identifying text	SP asks kids to identify letters, words, or text
Craft Time		When children do a craft designed by storytime provider outside of the traditional storytime
	Writing	When storytime provider provides kids opportunity to work on writing
Snack time		Period of time outside of traditional storytime where kids are having a snack.
Playtime		Period of time outside of traditional storytime for unstructured play. Libraries usually provide a range of toys and a space for children to play.
Requesting caregiver help		provider asks caregivers to help with something in storytime
Teamwork		

Caregiver Code System

Code	Memo
Getting kids settled	caregivers help to get kids settled for storytime. This includes helping them find a place to sit.
Help with activity	caregivers help storytime provider with doing an activity
Directing child's attention	directing child's attention to storytime provider either by pointing or by repeating what storytime provider said
Extending learning for child	caregiver asks questions or engages with child to extend their learning from storytime
conversation with storytime provider	when caregivers have an informal conversation with storytime provider
Looking at book with child	caregiver is looking at a book with their child
Playing with child	when caregiver is playing with child (Pretending to get them or tickling them)
Scaffolding activity for child	when caregiver scaffolds an activity for preschooler attending storytime. Caregiver will help by giving some guidance or helping with some stuff but does not just do it for the child
helping child with something unrelated to storytim	caregiver helps child with something that is not related to storytime content or rules (such as giving them food, picking up things, grabbing their coats and shoes, etc. THis also includes making a nametag if the caregiver just does it for the child and doesn't help them do it
Caring for younger sibling	caregiver is tending to younger sibling, such as holding them, talking to them, feeding them, walking around with them
Interacting with other kids	when caregiver interacts with kids that are not their kids
Scaffolding for younger children	caregiver does motions for younger child or shows them how to do the motions
Modeling	when caregiver is overtly modeling the actions or behaviors for the child. It might be that they do it right in front of them or get their attention and then show how to do
Interaction with other caregivers	caregivers interact with other caregivers
Sitting seperately from kids	caregivers sits in chairs or at back while kids sit somewhere else
Sitting with kids	caregiver is sitting on floor with kids
Engaged in another activity	Caregiver is doing something else while sitting in storytime such as using their phone or readhing a book - does not include caregivers dealing with younger siblings
Conversation with child	caregiver engages in conversation with the child
Emotional support	caregiver provides emotional support to child, affirms something they do, or just something to let child know they are there. This includes a show of affection, waving at child or giving them five. THis also includes when a child returns to caregiver during storytime for affection or to sit in their lap.
Listening to storytime content	caregivers just sit and listen but do not interact with storytime content - this does not include those who are actively interacting or caregivers who are doing something else like being on their phone or reading a book
Doing actions to rhymes and songs	caregivers do the actions to the rhymes and songs
Interacting with storytime content	caregivers participate in storytime content, such as answering questions, repeating phrases....
Guiding child to rules and routine of storytime	helps child know how to act in storytime (sitting down, interacting at appropriate times, not being too loud, listening to instructions)
Behavioral Management	caregivers manage the behavior of their children....this would include where they are misbehaving or doing something unsafe. It would not include where they are just standing up or being a little loud.

Gathering info about storytime or library	caregiver asks questions about storytime, schedules, programs, checking out books, etc
Help with admin task	Caregivers help with something related to administration of storytime - setting up, cleaning up

SEALE Tool

Approaches to Learning

EMOTIONAL AND BEHAVIORAL SELF-REGULATION	
Goal P-ATL 1. Child manages emotions with increasing independence.	
Manages less intense emotions, such as mild frustration, independently.	If the child is a little frustrated but then calms down on his own, for example - yelling that he can't see but then calming down
May require adult support to manage more intense emotions.	When adult steps in to calm child down
Has an expanding range of strategies for managing emotions, both less intense emotions as well as those that cause greater distress.	uses multiple ways to deal with strong emotions, such as walking away, shifting attention somewhere else, or voicing frustration
May still look to adults for support in managing the most intense emotions, but shows increasing skill in successfully using strategies suggested by adults.	
Expresses emotions in ways that are appropriate to the situation.	uses words and calm voice to express that they don't want to do something or that they are frustrated
Looks for adult assistance when emotions are most intense.	
Uses a range of coping strategies to manage emotions with the support of an adult, such as using words or taking deep breaths.	
TOTAL	
Goal P-ATL 2. Child follows classroom rules and routines with increasing independence.	
Follows rules and routines with assistance or reminder from adults	
Demonstrates awareness of classroom rules when asked and is able to follow these rules most of the time.	
Follows most storytime routines	children follow what L says to do. They also appear to know where to sit and when to be quiet or talk
Responds to signals when transitioning from one activity to another.	They dow what L says when L prompts them to stand up or sit down when moving from one activity to another
TOTAL	
Goal P-ATL 3. Child appropriately handles and takes care of classroom materials.	
Usually handles, takes care of, and manages storytime materials, such as using them in appropriate ways	If child handles any storytime materials appropriately (including scarves, shakers, flannel board pieces, etc.)
Appropriately handles materials during activities.	
Cleans up and puts materials away appropriately, such as places blocks back on correct shelf or places markers in the correct bin.	
TOTAL	
Goal P-ATL 4. Child manages actions, words, and behavior with increasing independence.	

The behaviors in this tool come directly from the Head Start Early Learning Outcomes Framework.

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Manages own actions, words, and behavior with occasional support from adults.	children tend to behave (for the most part in storytime)
Demonstrates control over actions and words in response to a challenging situation	
Manages behavior according to expectations	goes and sits down if told to. Does what L and caregiver prompt them to
Waits for turn, such as waits in line	
Refrains from aggressive behavior towards others.	
Begins to understand the consequences of behavior	
Can describe the effects their behavior may have on others	
TOTAL	
COGNITIVE SELF-REGULATION (EXECUTIVE FUNCTIONING)	
Goal P-ATL 5. Child demonstrates an increasing ability to control impulses.	
Sometimes controls impulses independently, while at other times needs support from an adult.	when kids act as expected during storytime, instead of running around, or using loud voices.
Stops an engaging activity to transition to another less desirable activity with adult guidance and support.	
Delays having desires met, such as agreeing to wait turn to start an activity.	
Without adult reminders, waits to communicate information to a group.	
Refrains from responding impulsively, such as waiting to be called on during group discussion or requesting materials rather than grabbing them	
TOTAL	
Goal P-ATL 6. Child maintains focus and sustains attention with minimal adult support.	
With increasing independence, focuses attention on tasks and experiences for a period of time, despite interruptions or distractions.	child focuses on what is going on in storytime for a period of time or focuses on something else they might be doing, like looking at a book, or writing at the nametag table
Maintains focus on activities for extended periods of time, such as 15 minutes or more.	
Engages in purposeful play for extended periods of time.	Engages in a structured play activity with L (such as putting a quilt together, dancing to music, or playing a game)
Attends to adult during large and small group activities with minimal support.	
TOTAL	
Goal P-ATL 7. Child persists in tasks	
Persists on preferred tasks. Sometimes persists on less preferred activities with or without adult support	
Completes tasks that are challenging or less preferred despite frustration, either by persisting independently or seeking help from an adult or other child.	cihld works at something challenging like tying their shoe; or writing

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Returns with focus to an activity or project after having been away from it.	child comes back to storytime after being away for some reason and is involved and focused
TOTAL	
Goal P-ATL 8. Child holds information in mind and manipulates it to perform tasks.	
Holds an amount of information in mind in order to successfully complete tasks.	
Accurately recounts recent experiences in the correct order and includes relevant details.	
Successfully follows detailed, multi-step directions, sometimes with reminders.	
Remembers actions to go with stories or songs shortly after being taught.	
TOTAL	
Goal P-ATL 9. Child demonstrates flexibility in thinking and behavior.	
Demonstrates flexibility, or the ability to switch gears, in thinking and behavior	When children are able to transition easily from activity to activity
Responds consistently to adult suggestions to show flexibility in approaching tasks or solving problems	
Tries different strategies to complete work or solve problems including with other children	child tries different strategies to do something or suggest different strategies for doing something
Applies different rules in contexts that require different behaviors, such as using indoor voices or feet instead of outdoor voices or feet.	When children appear to understand that they should be calm and listen during books and can get more lively during some songs or movement activities.
Transitions between activities without getting upset.	
TOTAL	
SUB-DOMAIN: INITIATIVE AND CURIOSITY	
Goal P-ATL 10. Child demonstrates initiative and independence.	
Shows initiative, particularly when engaged in interactions with familiar adults or preferred activities.	If child initiates an interaction or activity or just tells L something out of the blue.
Demonstrates a willingness and capability to work independently for increasing amounts of time.	Child goes off and does something on their own during storytime such as looking at a different book or writing at the nametage table.
Engages in independent activities.	Child goes off and does something on their own during storytime such as looking at a different book or writing at the nametage table.
Makes choices and communicates these to adults and other children.	child chooses something and says it out loud such as choosing a color and then saying it
Independently identifies and seeks things to complete activities or tasks,	Child finds things they need to complete a task such as finds a book or a pencil and paper.
Plans play scenarios, such as dramatic play or construction, by establishing roles for play, using appropriate materials, and generating appropriate scenarios to be enacted.	
TOTAL	

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Goal P-ATL 11. Child shows interest in and curiosity about the world around them.	
Seeks out new information and explores new play and tasks both independently and with adult support.	
Asks questions and seeks new information.	asks questions or goes and independantly seeks out books or other information
Is willing to participate in new activities or experiences even if they are perceived as challenging.	
Demonstrates eagerness to learn about and discuss a range of topics, ideas, and activities.	If child interacts with SP, adult, or other children around a few different topics
TOTAL	
SUB-DOMAIN: CREATIVITY	
Goal P-ATL 12. Child expresses creativity in thinking and communication.	
Communicates creative ideas and actions both with and without prompting from adults.	
Asks questions related to tasks or activities that indicate thinking about new ways to accomplish the task or activity.	
Approaches tasks, activities, and play in ways that show creative problem solving.	child suggests or demonstrates that they have found other ways to problem solve
Uses multiple means of communication to creatively express thoughts, feelings, or ideas.	
TOTAL	
Goal P-ATL 13. Child uses imagination in play and interactions with others.	
Consistently uses imagination in play and other creative works. Begins to communicate creative ideas to other children and adults.	
Develops more elaborate imaginary play, stories, and other creative works with children and adults.	
Engages in social and pretend play.	Child engages in a play-based activity where they are interacting with other children
Uses imagination with materials to create stories or works of art.	
Uses objects or materials to represent something else during play, such as using a paper plate or Frisbee as a steering wheel.	
TOTAL	

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Social & Emotional

SUB-DOMAIN: RELATIONSHIPS WITH ADULTS	
Goal P-SE 1. Child engages in and maintains positive relationships and interactions with adults.	
Engages in positive interactions with adults.	
Is able to separate from trusted adults when in familiar settings.	
Uses adults as a resource to solve problems/Seeks help from adults when needed.	
Clearly shows enjoyment in interactions with trusted adults	
Initiates interactions with adults	When child say something to L without being prompted
Participates in longer and more reciprocal interactions with both trusted and new adults.	
Interacts readily with trusted adults.	
Shows affection and preference for adults who interact with them on a regular basis.	When child goes back to sit with CG during storytime
TOTAL	
Goal P-SE 2. Child engages in prosocial and cooperative behavior with adults.	
Engages in prosocial behavior with adults (using respectful language or greetings) and usually responds appropriately to adult requests and directions	
Uncooperative behavior with familiar adults may happen and the child is able to resolve minor conflicts with adults with support	
Attends to an adult when asked.	
Follows adult guidelines and expectations for appropriate behavior.	
Asks or waits for adult permission before doing something when they are unsure.	Asking permission to do something such as go to the bathroom or touch something
TOTAL	
SUB-DOMAIN: RELATIONSHIPS WITH OTHER CHILDREN	
Goal P-SE 3. Child engages in and maintains positive interactions and relationships with other children.	
Engages in and maintains positive interactions with other children.	

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Demonstrates prosocial behaviors (such as sharing and taking turns) with other children, with and without prompting from adults.	
Likely to show at least some preference for playing with particular children.	If child shows preference of affection for another child (calling them their friend, giving them a hug, or rubbing their back)
Uses a variety of skills for entering social situations with other children, such as suggesting something to do together, joining an existing activity, or sharing a toy.	Child enters social situation by walking up to or sitting next to another child and talking to them and engaging with them in some way.
Takes turns in conversations and interactions with other children.	
Develops friendships with one or two preferred other children.	
TOTAL	
Goal P-SE 4. Child engages in cooperative play with other children.	
Often plays cooperatively with other children.	When the children interact for an extended period of time around a shared goal (such as looking at a book together)
During play, works with other children to plan and enact this play in a coordinated way.	
Engages in joint play, such as using coordinated goals, planning, roles, and games with rules, with at least one other child at a time.	
Demonstrates willingness to include others' ideas during interactions and play.	
Shows enjoyment of play with other children, such as through verbal exchanges, smiles, and laughter.	Shows enjoyment of interacting with other children during storytime activities
Engages in reflection and conversation about past play experiences.	
TOTAL	
Goal P-SE 5. Child uses basic problem-solving skills to resolve conflicts with other children.	

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Recognizes and describes basic social problems in books or pictures, such as both children wanting the same toy, and during interactions with other children, such as “Why do you think your friend might be sad?”	child is able to recognize that something is not nice or that they wouldn't be happy with something
Uses basic strategies for dealing with common conflicts, such as sharing, taking turns, and compromising.	
Expresses feelings, needs, and opinions in conflict situations.	
Seeks adult help when needed to resolve conflicts.	
TOTAL	
SUB-DOMAIN: EMOTIONAL FUNCTIONING	
Goal P-SE 6. Child expresses a broad range of emotions and recognizes these emotions in self and others.	
Expresses a broad range of emotions and begins to notice more subtle or complex emotions in self and others, such as embarrassed or worried	
Recognizes and labels basic emotions in books or photographs.	
Uses words to describe own feelings.	
Uses words to describe the feelings of adults or other children.	
TOTAL	
Goal P-SE 7. Child expresses care and concern toward others.	
Pays attention when others are distressed	
Makes empathetic statements to adults or other children.	
Offers support to adults or other children who are distressed.	
TOTAL	
Goal P-SE 8. Child manages emotions with increasing independence.*	
Manages less intense emotions, such as mild frustration, independently.	
May require adult support to manage more intense emotions.	When adult steps in to calm child down

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Has an expanding range of strategies for managing emotions, both less intense emotions as well as those that cause greater distress.	
May still look to adults for support in managing the most intense emotions, but shows increasing skill in successfully using strategies suggested by adults.	
Expresses emotions in ways that are appropriate to the situation.	
Looks for adult assistance when emotions are most intense.	When child goes running to adult for help with managing emotions
Uses a range of coping strategies to manage emotions with the support of an adult, such as using words or taking deep breaths.	
TOTAL	
SUB-DOMAIN: SENSE OF IDENTITY AND BELONGING	
Goal P-SE 9. Child recognizes self as a unique individual having own abilities, characteristics, emotions, and interests.	
Describes self using several different characteristics.	
Demonstrates knowledge of uniqueness of self, such as talents, interests, preferences, or culture.	Kids talk about things they like and don't like or things they know how to do
TOTAL	
Goal P-SE 10. Child expresses confidence in own skills and positive feelings about self.	
Shows satisfaction or seeks acknowledgment when completing a task or solving a problem.	
Expresses own ideas or beliefs in group contexts or in interactions with others.	
Uses positive words to describe self, such as kind or hard-worker.	
TOTAL	
Goal P-SE 11. Child has sense of belonging to family, community, and other groups.	
Identifies self as being a part of different groups, such as family, community, culture, faith, or preschool.	
Relates personal stories about being a part of different groups.	
Identifies similarities and differences about self across familiar environments and settings.	
TOTAL	

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Language and Literacy

DOMAIN: LANGUAGE AND COMMUNICATION	
SUB-DOMAIN: ATTENDING AND UNDERSTANDING	
Goal P-LC 1. Child attends to communication and language from others.	
Uses verbal and non-verbal signals appropriately to acknowledge the comments or questions of others.	
Shows ongoing connection to a conversation, group discussion, or presentation.	
TOTAL	
Goal P-LC 2. Child understands and responds to increasingly complex communication and langua	
Shows an ability to recall (in order) multiple step directions.	
Demonstrates understanding of a variety of question types, such as “Yes/No?” or “Who/What/When/Where?” or “How/Why?”	
Shows understanding of a variety of sentence types, such as multi-clause, cause-effect, sequential order, or if-then.	
Shows an understanding of talk related to the past or future.	
Shows understanding, such as nodding or gestures, in response to the content of books read aloud, stories that are told, or lengthy explanations given on a topic. Children who are DLLs may demonstrate more complex communication and language in their home language than in English.	
TOTAL	
SUB-DOMAIN: COMMUNICATING AND SPEAKING	
Goal P-LC 3. Child varies the amount of information provided to meet the demands of the situation.	
Usually provides sufficient detail in order to get needs met, such as explaining a point of difficulty in a task or sharing a request from home with the teacher.	
Uses language, spoken or sign, to clarify a word or statement when misunderstood.	
Children who are DLLs may switch between their languages.	
TOTAL	

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Goal P-LC 4. Child understands, follows, and uses appropriate social and conversational rules.	
Maintains multi-turn conversations with adults, other children, and within larger groups by responding in increasingly sophisticated ways, such as asking related questions or expressing agreement.	
With increasing independence, matches the tone and volume of expression to the content and social situation, such as by using a whisper to tell a secret.	When they whisper or get really loud as a part of storytime, or when child talks quietly to another child or caregiver
TOTAL	
Goal P-LC 5. Child expresses self in increasingly long, detailed, and sophisticated ways.	
Communicates clearly enough to be understood by familiar adults, but may make some pronunciation and grammatical errors.	
Typically uses 3–5 word phrases/sentences when communicating.	
Can offer multiple (2–3) pieces of information on a single topic and answer simple questions	
TOTAL	
SUB-DOMAIN: VOCABULARY	
Goal P-LC 6. Child understands and uses a wide variety of words for a variety of purposes.	
Shows a steady increase in vocabulary through the acquisition of words with increasing specificity and variety.	
Uses new vocabulary words to describe relations among things or ideas.	
Shows repetition of new words offered by adults and may ask about the meaning of unfamiliar words.	
Demonstrates the use of multiple (2–3) new words or signs a day during play and other activities.	
Shows recognition of and/or familiarity with key domain-specific words heard during reading or discussions	Child recognizes vocabulary from from other domains like math or science (number words, shape words, animals, nature words, etc.)

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With multiple exposures, uses new domain-specific vocabulary during activities, such as using the word "cocoon" when learning about the lifecycle of caterpillars, or "cylinder" when learning about 3-D shapes.	
With support, forms guesses about the meaning of new words from context clues.	
TOTAL	
Goal P-LC 7. Child shows understanding of word categories and relationships among words.	
Typically uses known words in the correct context and, with support, shows an emerging understanding of how words are related to broader categories, such as sorting things by color.	When asked what something is based on a category, child answers with something that correctly belongs with that category…. Such as kid responds with a color word when asked what color something is
Demonstrates an increasingly sophisticated understanding of words and word categories with support, such as listing multiple examples of a familiar category or identifying a synonym or antonym.	
Categorizes words or objects, such as sorting a hard hat, machines, and tools into the construction group, or giving many examples of farm animals.	
Discusses new words in relation to known words and word categories, such as "It fell to the bottom when it sank" or "When you hop it's like jumping on one leg" or "The bear and fox are both wild animals."	
Identifies shared characteristics among people, places, things, or actions, such as identifying that both cats and dogs are furry and have four legs.	
Identifies key common antonyms, such as black/white or up/down. Identifies 1–2 synonyms for very familiar words, such as glad or happy.	

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Shows an ability to distinguish similar words, such as “I don’t like it, I love it!” or “It’s more than tall, it’s gigantic” or “It’s so cold, it’s frosty.”	
TOTAL	
DOMAIN: LITERACY	
SUB-DOMAIN: PHONOLOGICAL AWARENESS	
Goal P-LIT 1. Child demonstrates awareness that spoken language is composed of smaller segm	
Shows rote imitation and enjoyment of rhyme and alliteration.	This includes rhyming and alliteration in books, chants, and songs
Demonstrates rhyme recognition, such as identifying which words rhyme from a group of three: hat, cat, log.	
Is able to count syllables and/or understand sounds in spoken words.	
Recognizes phonemic changes in words, such as noticing the problem with “Old McDonald had a charm.”	
Provides one or more words that rhyme with a single given target, such as “What rhymes with log?”	
Produces the beginning sound in a spoken word, such as “Dog begins with /d/.”	
Provides a word that fits with a group of words sharing an initial sound, with adult support, such as “Sock, Sara, and song all start with the /s/ sound. What else starts with the /s/ sound?”	
TOTAL	
SUB-DOMAIN: PRINT AND ALPHABET KNOWLEDGE	
Goal P-LIT 2. Child demonstrates an understanding of how print is used (functions of print) and the rules that govern how print works (conventions of print).	
Distinguishes print from pictures and shows an understanding that print is something meaningful, such as asking an adult “What does this say?” or “Read this.”	If child identifies a letter or a word. Or talks about pictures and print seperately

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Begins to demonstrate an understanding of the connection between speech and print. Shows a growing awareness that print is a system that has rules and conventions, such as holding a book correctly or following a book left to right.	
Understands that print is organized differently for different purposes, such as a note, list, or storybook.	
Understands that written words are made up of a group of individual letters.	If child identifies a letter in a word or tells someone how to spell something or tells someone the letters in their name or writes out their name.
Begins to point to single-syllable words while reading simple, memorized texts.	
Identifies book parts and features, such as the front, back, title, and author.	
TOTAL	
Goal P-LIT 3. Child identifies letters of the alphabet and produces correct sounds associated with letters.	
Shows an awareness of alphabet letters, such as singing the ABC song, recognizing letters from one's name, or naming some letters that are encountered often.	
Recognizes and names at least half of the letters in the alphabet, including letters in own name (first name and last name), as well as letters encountered often in the environment.	
Names 18 upper- and 15 lower-case letters.	
Knows the sounds associated with several letters.	
TOTAL	
SUB-DOMAIN: COMPREHENSION AND TEXT STRUCTURE	
Goal P-LIT 4. Child demonstrates an understanding of narrative structure through storytelling/re-telling.	

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With support, may be able to tell one or two key events from a story or may act out a story with pictures or props.	Child is able to recall some things from story being read or is able to talk about what is happening using the pictures or is able to share things about a story read prevously
Retells 2–3 key events from a wellknown story, typically in the right temporal order and using some simple sequencing terms, such as first … and then.	
Tells fictional or personal stories using a sequence of at least 2–3 connected events.	
Identifies characters and main events in books and stories.	Is able to identify characters in the book or talk about important things that happen.
TOTAL	
Goal P-LIT 5. Child asks and answers questions about a book that was read aloud.	
Can answer basic questions about likes or dislikes in a book or story.	
Asks and answers questions about main characters or events in a familiar story.	
Can make predictions about events that might happen next.	
Answers questions about details of a story with increasingly specific information, such as when asked “Who was Mary?” responds “She was the girl who was riding the horse and then got hurt.”	
Answers increasingly complex inferential questions that require making predictions based on multiple pieces of information from the story; inferring characters’ feelings or intentions; or providing evaluations of judgments that are grounded in the text.	
Provides a summary of a story, highlighting a number of the key ideas in the story and how they relate.	
TOTAL	
SUB-DOMAIN: WRITING	

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Goal P-LIT 6. Child writes for a variety of purposes using increasingly sophisticated marks.	
Engages in writing activities that consist largely of drawing and scribbling. Begins to convey meaning. With modeling and support, writes some letter-like forms and letters.	
Progressively uses drawing, scribbling, letter-like forms, and letters to intentionally convey meaning. With support, may use invented spelling consisting of salient or beginning sounds, such as L for elevator or B for bug.	
Creates a variety of written products that may or may not phonetically relate to intended messages.	
Shows an interest in copying simple words posted in the classroom.	
Attempts to independently write some words using invented spelling, such as K for kite.	
Writes first name correctly or close to correctly.	
Writes (draws, illustrates) for a variety of purposes and demonstrates evidence of many aspects of print conventions, such as creating a book that moves left to right.	
TOTAL	

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Cognition

DOMAIN: MATHEMATICS DEVELOPMENT	
SUB-DOMAIN: COUNTING AND CARDINALITY	
Goal P-MATH 1. Child knows number names and the count sequence.	
Says or signs some number words in sequence (up to 10), starting with one. Understands that counting words are separate words, such as “one,” “two,” “three” versus “onetwothree”.	
Counts verbally or signs to at least 20 by ones.	
TOTAL	
Goal P-MATH 2. Child recognizes the number of objects in a small set.	
Develops an understanding of what whole numbers mean. Begins to recognize the number of small objects in groups without counting (referred to as “subitizing”).	identifies small sets or holds up certain number of fingers without having to count them
Quickly recognizes the number of objects in a small set (referred to as “subitizing”).	pauses before Identifing the number of items in a small set quickly (i.e. identifies that there are three flowers in the picture without counting them)
Instantly recognizes, without counting, small quantities of up to 5 objects and says or signs the number.	immediately Identifies the number of items in a small set quickly (i.e. identifies that there are three flowers in the picture without counting them)
TOTAL	
Goal P-MATH 3. Child understands the relationship between numbers and	
Understands that number words refer to quantity. May point to or move objects while counting objects to 10 and beyond (one-to-one correspondence).	
Counts and answers “How many?” questions for approximately 10 objects.	
Accurately counts as many as 5 objects in a scattered configuration.	
Understands that each successive number name refers to a quantity that is one larger.	

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Understands that the last number said represents the number of objects in a set.	EX. When child counts a set of three and then says there are three things. Or when L asks them to do something four times and they do it four times.
TOTAL	
Goal P-MATH 4. Child compares numbers.	
Begins to accurately count and compare objects that are about the same size and are in small groups with adult assistance, such as counts a pile of 2 blocks and a pile of 4, and determines whether the piles have the same or different numbers of blocks. Identifies the first and second objects in a sequence.	
Counts to determine and compare number amounts even when the larger group's objects are smaller in size, such as buttons, compared with the smaller group's objects that are larger in size, such as markers. Uses numbers related to order or position.	
Identifies whether the number of objects in one group is more than, less than, or the same as objects in another group for up to at least five objects.	
Identifies and uses numbers related to order or position from first to tenth.	
TOTAL	
Goal P-MATH 5. Child associates a quantity with written numerals up to 5 and begins	
Begins to understand that a written numeral represents a quantity	
Uses information symbols, such as a tally, to represent numerals. With adult support, writes some numerals up to 10.	
Associates a number of objects with a written numeral 0–5.	
Recognizes some numerals up to 10.	
TOTAL	
SUB-DOMAIN: OPERATIONS AND	

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Goal P-MATH 6. Child understands addition as adding to and understands subtraction	
Begins to add and subtract very small collections of objects with adult support. For example, the teacher says, "You have 3 grapes and get 1 more. How many in all?" Child counts out 3, then counts out 1 more, then counts all 4: "1, 2, 3, 4. I have 4!"	
Represents addition and subtraction in different ways, such as with fingers, objects, and drawings.	
Solves addition and subtraction word problems. Adds and subtracts up to 5 to or from a given number.	
With adult assistance, begins to use counting on from the larger number for addition. For example, when adding a group of 3 and a group of 2, counts "One, two, three…" and then counts on "Four, five!" (keeping track with fingers). When counting back for subtraction such as taking away 3 from 5, counts, "Five, four, three…two!" (keeping track with fingers).	
TOTAL	
Goal P-MATH 7. Child understands simple	
Recognizes a simple pattern, and with adult assistance, fills in the missing element of a pattern, such as boy, girl, boy, girl, ___, girl.	When children figure out the pattern in something and can do the next piece in the pattern. EX children figure out the next action in the song because it has a repeating pattern
Creates, identifies, extends, and duplicates simple repeating patterns in different forms, such as with objects, numbers, sounds, and movements.	
Duplicates simple patterns in a different location than demonstrated, such as making the same alternating color pattern with blocks at a table that was demonstrated on the rug.	

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Extends patterns, such as making an eight block tower of the same pattern that was	
Identifies the core unit of sequentially repeating patterns, such as color in a sequence of alternating red and blue blocks.	
TOTAL	
SUB-DOMAIN: MEASUREMENT	
Goal P-MATH 8. Child measures objects by their various attributes using standard and non-standard measurement. Uses	
With adult support, begins to understand that attributes can be compared, such as one child can be taller than another child.	
With some adult support, uses measurable attributes to make comparisons, such as identifies objects as the same/different and more/less.	
Measures using the same unit, such as putting together snap cubes to see how tall a book is.	
Compares or orders up to 5 objects based on their measurable attributes, such as height or weight.	
Uses comparative language, such as shortest, heavier, or biggest.	
TOTAL	
SUB-DOMAIN: GEOMETRY AND SPATIAL	
Goal P-MATH 9. Child identifies, describes, compares, and composes shapes.	
Recognizes and names typical circle, square, and sometimes a triangle. With adult support, matches some shapes that are different sizes and orientations.	
Recognizes and compares a greater number of shapes of different sizes and orientations. Begins to identify sides and angles as distinct parts of shapes.	

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Names and describes shapes in terms of length of sides, number of sides, and number of angles.	
Correctly names basic shapes regardless of size and orientation.	
Analyzes, compares and sorts twoand three-dimensional shapes and objects in different sizes. Describes their similarities, differences, and other attributes, such as size and shape.	
Creates and builds shapes from components.	
TOTAL	
Goal P-MATH 10. Child explores the	
Increasingly understands spatial vocabulary. Follows directions involving their own position in space, such as “Move to the front of the line.”	
Understands and uses language related to directionality, order, and the position of objects, including up/down, and in front/behind.	
Correctly follows directions involving their own position in space, such as “Stand up” and “Move forward.”	
TOTAL	
Domain: Scientific Reasoning	
SUB-DOMAIN: SCIENTIFIC INQUIRY	
Goal P-SCI 1. Child observes and describes observable phenomena (objects, materials,	
Uses the five senses to observe objects, materials, organisms, and events. Provides simple verbal or signed descriptions.	Uses more than one sense (seeing, hearing, smelling, touching…) to observe something and then make a comment about it
Makes increasingly complex observations of objects, materials, organisms, and events. Provides greater detail in descriptions.	
Identifies the five senses (smell, touch, sight, sound, taste) and uses them to make observations.	

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Uses observational tools to extend the five senses, such as a magnifying glass, microscope, binoculars, or stethoscope.	
Represents observable phenomena with pictures, diagrams, and 3-D models.	
TOTAL	
Goal P-SCI 2. Child engages in scientific	
Begins to use scientific vocabulary words with modeling and support from an adult. Sometimes repeats new words offered by adults.	child uses science vocabulary words such as animal names, plants, things in nature
Uses a greater number of scientific vocabulary words. Repeats new words offered by adults and may ask questions about unfamiliar words.	
Uses scientific practice words or signs, such as observe, describe, compare, contrast, question, predict, experiment, reflect, cooperate, or measure.	
Uses scientific content words when investigating and describing observable phenomena, such as parts of a plant, animal, or object.	
TOTAL	
Goal P-SCI 3. Child compares and categorizes observable phenomena.	
Sorts objects into groups based on simple attributes, such as color.	
With increasing independence, sorts objects into groups based on more complex attributes, such as weight, sound, or texture.	
Uses measurement tools, such as a ruler, balance scale, eye dropper, unit blocks, thermometer, or measuring cup, to quantify similarities and differences of observable phenomena.	
TOTAL	
SUB-DOMAIN: REASONING AND PROBLEM-	
Goal P-SCI 4. Child asks a question, gathers information, and makes predictions.	

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Asks simple questions. Uses adults as primary resources to gather information about questions.	
With adult support and modeling, makes simple predictions, such as "I think that the golf ball will be heavier than the ping pong ball."	Makes predictions based on observations of real phenomenon (this does not include random predictions of what might happen in a story)(examples - SP asks what will happen if characters in book continue to pull on blanket; or predicting which hand SP has the rock in at the end of the rhyme)
Asks more complex questions. Uses other sources besides adults to gather information, such as books, or other experts.	
Asks questions that can be answered through an investigation, such as "What do plants need to grow?" or "What countries do the children in our class come from?".	
Makes predictions and brainstorms solutions based on background knowledge and experiences, such as "I think that plants need water to grow." or "I think adding yellow paint to purple will make brown."	
TOTAL	
Goal P-SCI 5. Child plans and conducts investigations and experiments.	
With adult support, engages in simple investigations and experiments, such as building a "bridge" out of classroom materials and seeing how many dolls it will hold before it collapses. Records data with teacher assistance, mostly using pictures and marks on a page.	

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With increasing independence, engages in some parts of conducting complex investigations or experiments. Increasingly able to articulate the steps that need to be taken to conduct an investigation. Uses more complex ways to gather and record data, such as with adult support, makes a graph that shows children's favorite snacks.	
Articulates steps to be taken and lists materials needed for an investigation or experiment.	
Implements steps and uses materials to explore testable questions, such as "Do plants need water to grow?" by planting seeds and giving water to some but not to others.	
Uses senses and simple tools to observe, gather, and record data, such as gathering data on where children's families are from and creating a graph that shows the number of children from different countries.	
TOTAL	
Goal P-SCI 6. Child analyzes results, draws conclusions, and communicates results.	
With adult assistance, analyzes and interprets data. Draws conclusions and provides simple descriptions of results.	
Analyzes and interprets data and summarizes results of investigation.	
Draws conclusions, constructs explanations, and verbalizes cause and effect relationships.	
With adult support, compares results to initial prediction and offers evidence as to why they do or do not work.	
Child generates new testable questions based	

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Communicates results, solutions, and conclusions through a variety of methods, such as telling an adult that plants need water to grow or putting dots on a map that show the number of children from each country.	
TOTAL	

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Perceptual, Motor, and Physical

Domain: Perceptual, Motor, and Physical Development	
SUB-DOMAIN: GROSS MOTOR	
Goal P-PMP 1. Child demonstrates control, strength, and coordination of large mu	
Performs some skills, such as jumping for height and hopping, but these skills may not be consistently demonstrated.	
Demonstrates balance in large-muscle movement, such as walking on a log without falling or balancing on one leg.	
Performs activities that combine and coordinate large muscle movements, including swinging on a swing, climbing a ladder, or dancing to music.	
Demonstrates strength and stamina that allow for participation in a range of physical activities, such as running around playing tag.	
TOTAL	
Goal P-PMP 2. Child uses perceptual information to guide motions and interactions with objects and other people.	
Demonstrates awareness of own body and other people's space during interactions.	
Moves body in relation to objects to effectively perform tasks, such as moving body in position to kick a ball.	
When asked, can move own body in front of, to the side, or behind something or someone else, such as getting in line with other children.	
Changes directions when moving with little difficulty.	
TOTAL	
SUB-DOMAIN: FINE MOTOR	
Goal P-PMP 3. Child demonstrates increasing control, strength, and coordination of small muscles.	
Performs tasks that require more complex hand-eye coordination, such as cutting out shapes and drawing letter-like forms, with moderate levels of precision and control.	
Easily coordinates hand and eye movements to carry out tasks, such as working on puzzles or stringing beads together.	

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Uses a pincer grip to hold and manipulate tools for writing, drawing, and painting.	
TOTAL	
SUB-DOMAIN: HEALTH, SAFETY, AND NUTRITION	
Goal P-PMP 4. Child demonstrates personal hygiene and self-care skills.	
Begins to take more responsibility for personal hygiene and self-care skills. Sometimes completes them without adult prompting.	
Washes hands with soap and water. Knows to do this before eating, after using the bathroom, or after blowing nose.	
Demonstrates increasing ability to take responsibility for participating in personal self-care skills, such as brushing teeth or getting dressed.	
Goal P-PMP 5. Child develops knowledge and skills that help promote nutritious food choices and eating habits.	
Demonstrates an increasing understanding of the ways in which foods and nutrition help the body grow and be healthy. Makes healthy eating choices both independently and with support.	
Identifies a variety of healthy and unhealthy foods.	
Demonstrates basic understanding that eating a variety of foods helps the body grow and be healthy.	
Moderates food consumption based on awareness of own hunger and fullness.	
Goal P-PMP 6. Child demonstrates knowledge of personal safety practices and routines.	
Exhibits increasing independence in following basic personal safety practices and routines. Follows adult guidance around more complex practices.	
Identifies, avoids, and alerts others to danger, such as keeping a safe distance from swings.	

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Identifies and follows basic safety rules with adult guidance and support, such as transportation and street safety practices.	

The behaviors in this tool come directly from the Head Start Early Learning Outcomes Framework.

Office of Head Start. (2015). Head Start Early Learning Outcomes Framework: Ages Birth to Five. Washington, D.C.: Administration for Children and Families. Retrieved from https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf

Print view of 'Storytime as an Information Environment'

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UNIVERSITY OF WASHINGTON

CONSENT FORM

Exploring Storytime as an Information Environment

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RESEARCHERS' STATEMENT

I am asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent." You may print or save a copy of this form for your records.

PURPOSE OF THE STUDY

The purpose of this study is to help the researcher to understand the information environment that is provided for young children in storytime and the learning that occurs as a result.

STUDY PROCEDURES

Your participation involves you completing the following survey about your storytimes and 1) the information content and information resources included in your storytime; 2) the ways that you share information in storytime; 3) the roles you expect storytime participants to play; and 4) the learning that you work to encourage and that you think is occurring for children attending your storytimes.

RISKS, STRESS, OR DISCOMFORT

This research is considered minimal risk though you may be uncomfortable about sharing your storytime goals, expectations, practices, and beliefs. The survey is anonymous and each individual's responses will be kept confidential.

BENEFITS OF THE STUDY

This study is expected to help library stakeholders better understand the information environment provided by storytimes and the learning that occurs as a result. Interviewees will not necessarily directly benefit from being in this study. Results may be used to demonstrate the learning environment provided by storytime and to develop a framework for characterizing that environment.

CONFIDENTIALITY OF RESEARCH INFORMATION

Data from this study will be anonymous. You will not be asked for your name or any other identifiable information in the survey.

Government or university staff sometimes review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your records may be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

OTHER INFORMATION

You may refuse to participate and you are free to withdraw from this study at any time without penalty or loss of benefits to which you are otherwise entitled.

All data will be kept indefinitely in a secured location. The researcher may also use the data for future research and publications.

If you have questions about your rights as a research study participant, you can call the University of Washington Human Subjects Division at (206) 543-0098.

If you have questions about the research, or if you later feel that you have been harmed by participating in this study, please contact Katie Campana at kcampana@uw.edu or 980-298-2848.

SUBJECT'S STATEMENT

I understand by selecting 'yes' below, I volunteer to take part in this research. I have had a chance to ask questions.

Question 1.
I would like to complete the survey.

	Logic destinations
○ Yes	Don't skip (default)
○ No	End of Survey
No response	Don't skip (default)

Thank you for participating in this survey. This study seeks to understand more about the structure of storytime, the types of educational content included, the perceived learning outcomes for children, and your expectations for the roles of the children and adults who attend.

Question 2.
What is your library's service population?

- ○ <24,999
- ○ 25,000-99,999
- ○ 100,000-499,999
- ○ 500,000+

Question 3.
What type of area is your library located in?

- ○ urban
- ○ suburban
- ○ rural
- ○ Other:

Question 4.
What is your highest level of education?

- ○ High school degree
- ○ Bachelor's
- ○ Master's in Library and Information Science
- ○ Other master's degree
- ○ PhD
- ○ Other:

Question 5.

How many years of experience do you have in providing storytimes?

- ○ 0-2 years
- ○ 2-5 years
- ○ 5-10 years
- ○ greater than 10 years

Question 6.
Did you participate in the VIEWS2 study?

- ○ Yes
- ○ No

Question 7.
What types of early literacy/learning training have you had? (check all that apply)

- ☐ Every Child Ready to Read 1
- ☐ Every Child Ready to Read 2
- ☐ Mother Goose on the Loose
- ☐ Supercharged Storytimes
- ☐ library-specific training
- ☐ none
- ☐ Other:

Think of one particular type of storytime you offer (i.e. baby, toddler, preschool, STEM, play and learn, etc). In the section below, I am going to ask you a series of questions about storytimes. Please answer the questions with that type of storytime in mind. Even if you offer more than one type of storytime, please answer all the questions about that one type of storytime.

Question 8.
Provide a very brief description of the type of storytime you are focusing on for the questions below (i.e. baby storytime, toddler storytime, preschool storytime, pajama storytime, STEM storytime, family storytime, etc).

Question 9.
For the one type of storytime you chose to focus on for this survey, how many times per week do you offer this storytime?

- ○ 1
- ○ 2-4
- ○ 5 or more
- ○ I offer my storytime less than once a week
- ○ Other:

Question 10.
For the one type of storytime you chose to focus on for this survey, what is the target age group of it?

- ○ Birth to 18 months
- ○ 18 months to 36 months
- ○ 36 months to 60 months
- ○ birth to 60 months
- ○ Family
- ○ Other:

Question 11.
For the one type of storytime you chose to focus on for this survey, how many children attend, on average?

- ○ 0-10
- ○ 10-20
- ○ 20-30
- ○ 30-50
- ○ 50-100

Question 12.
For the one type of storytime you chose to focus on for this survey, what extra activities do you offer along with the storytime (either before, after, or during the storytime)? (check all that apply)

- ☐ craft time
- ☐ open play time
- ☐ block play
- ☐ snack time
- ☐ dramatic play time
- ☐ hands-on STEM activity
- ☐ none
- ☐ Other:

Question 13.
For the one type of storytime you chose to focus on for this survey, do you have goals for it?

- ○ Yes
- ○ No

Question 14.
If yes, what are some examples of these goals?

Question 15.
For the one type of storytime you chose to focus on for this survey, do you use themes for it?

- ○ Yes, in every storytime
- ○ Sometimes
- ○ No

Question 16.
If you answered yes or sometimes, what are three themes you have used in this specific type of storytime in past 2-3 months? (separate answers with commas)

Question 17.
For the one type of storytime you chose to focus on for this survey, do you use new media in it? (iPads, MP3 player, projector, smart board, etc)

- ○ Yes, in every storytime
- ○ Yes, in some storytimes
- ○ No, I do not use technology in my storytimes

Question 18.
If yes, what types of new media do you incorporate? (separate responses with commas)

Question 19.
If yes, what do you use the new media for?

Question 20.
For the one type of storytime you chose to focus on for this survey, do you provide ways for children to practice writing in it?

- ○ Yes
- ○ No

Question 21.
If yes, how? (check all that apply)

- ☐ Nametags
- ☐ During craft
- ☐ Tracing/drawing letters with hands or feet
- ☐ Other:

Question 22.
Think about the last two times you offered the type of storytime you chose to focus on for this survey.

What types of resources did you use? (check all that apply)

- ☐ images (other than those in books)
- ☐ props
- ☐ puppets
- ☐ technology
- ☐ flannel board
- ☐ white board
- ☐ books
- ☐ manipulatives (blocks, scarves)
- ☐ instruments
- ☐ visual schedule
- ☐ Other:

Question 23.
Think about the last two times you offered the type of storytime you chose to focus on for this survey.

What types of activities did you incorporate? (check all that apply)

- ☐ reading
- ☐ oral storytelling
- ☐ singing
- ☐ talking with children (conversations)
- ☐ hands-on activities
- ☐ dancing
- ☐ yoga
- ☐ other movement activities
- ☐ rhymes/chants
- ☐ fingerplays
- ☐ writing activities
- ☐ playing games
- ☐ acting things out
- ☐ letter of the day
- ☐ theme of the day
- ☐ Other:

Question 24.
If you selected *hands-on* or *movement activities* above, please provide 1-2 examples of each of these activities. (separate answers with commas)

Question 25.
For the one type of storytime you chose to focus on for this survey, what are the different ways you typically encourage children to interact with its content? (check all that apply)

- ☐ answering questions
- ☐ having a conversation with you
- ☐ gross motor movements
- ☐ fine motor movement
- ☐ repeating words and phrases
- ☐ acting things out
- ☐ participating in games
- ☐ using manipulatives such as shakers
- ☐ singing
- ☐ participating in hands-on activities
- ☐ interacting with peers
- ☐ reciting rhymes/chants
- ☐ Other:

Question 26.
For the one type of storytime you chose to focus on for this survey, what roles do you want children to play while attending it? (check all that apply)

- ☐ I want them to interact with storytime content by answering questions and talking to me
- ☐ I want them to participate in songs and rhymes
- ☐ I want them to follow directions
- ☐ I want them to know how to interact in a group
- ☐ I want them to listen quietly
- ☐ I want them to help to determine storytime content
- ☐ I want them to interact with their peers

- ☐ I want them to sit with their caregiver
- ☐ I want them to sit separate from their caregiver
- ☐ I want them to attend without their caregiver
- ☐ I don't have any expectations for what they do.
- ☐ Other:

Question 27.
For the type of storytime you chose to focus on for this survey, how do you communicate information with caregivers and encourage them to interact with information in it? (check all that apply)

- ☐ announcements
- ☐ discussion and conversation
- ☐ early learning tips
- ☐ encouraging participation in storytime
- ☐ encouraging them to scaffold activities for their child
- ☐ asking for help with producing an activity
- ☐ asking them to manage their child's behavior
- ☐ providing handouts
- ☐ using technology
- ☐ none of these
- ☐ I don't have caregivers present at my storytime
- ☐ Other:

Question 28.
For the one type of storytime you chose to focus on for this survey, what roles do you want caregivers to play while attending it? (check all that apply)

- ☐ I want them to interact with the storytime content
- ☐ I don't want them to be doing something unrelated to storytime (reading a book, looking at phone).
- ☐ I want them to be actively participating with their child
- ☐ I want them to model for their child
- ☐ I want them to scaffold activities for their child, if their child needs help
- ☐ I want them to manage their child's behavior
- ☐ I want them to help me with producing some activities
- ☐ I don't have any expectations for what they do.
- ☐ I don't expect them to be present
- ☐ Other:

Question 29.
For the one type of storytime you chose to focus on for this survey, what types of literacy concepts do you typically incorporate in it? (check all that apply)

- ☐ letter knowledge
- ☐ phonological awareness
- ☐ vocabulary
- ☐ print concepts
- ☐ background knowledge
- ☐ comprehension
- ☐ I don't incorporate literacy concepts
- ☐ Other literacy concepts:

Question 30.
For the one type of storytime you chose to focus on for this survey, what types of math concepts do you typically incorporate in it? (check all that apply)

- ☐ number identification
- ☐ counting
- ☐ one-to-one correspondence
- ☐ addition
- ☐ subtraction
- ☐ patterns
- ☐ shapes
- ☐ size/measurement
- ☐ I don't incorporate math concepts
- ☐ Other math concepts:

Question 31.
For the one type of storytime you chose to focus on for this survey, what kinds of science concepts do you typically incorporate in it? (check all that apply)

- ☐ animals
- ☐ human body
- ☐ nature
- ☐ space
- ☐ weather
- ☐ I don't incorporate science concepts
- ☐ Other science concepts:

Question 32.
For the one type of storytime you chose to focus on for this survey, what other types of concepts do you typically incorporate in it? (check all that apply)

- ☐ other cultures/countries
- ☐ foreign languages
- ☐ social/emotional
- ☐ storytime and library rules and routine
- ☐ I don't incorporate any other concepts
- ☐ Other concepts:

Question 33.
For the one type of storytime you chose to focus on for this survey, what types of skills do you typically try to encourage in it? (check all that apply)

- ☐ social skills (learning about and practicing social interaction)
- ☐ executive function & self regulation skills (practice with organizing and managing thoughts, actions, and emotions)
- ☐ gross motor skills (large muscle movements)
- ☐ fine motor skills (small muscle movements)
- ☐ digital literacy skills (learning about and practicing with technology)
- ☐ narrative skills (practice with describing things and telling stories)
- ☐ decoding skills (practice with sounding out and recognizing words)
- ☐ writing skills (practice with writing)

- ☐ oral language skills (practice with expressing knowledge, ideas, and feelings)
- ☐ none of these
- ☐ Other skills:

Question 34.
For the one type of storytime you chose to focus on for this survey, what types of learning do you feel are actually occurring for young children while attending it? (check all that apply)

- ☐ early literacy concepts and skills
- ☐ early math concepts and skills
- ☐ early science concepts and skills
- ☐ gross and fine motor skills
- ☐ executive function and self-regulation skills
- ☐ other languages
- ☐ cultural learning
- ☐ digital literacy concepts and skills
- ☐ social and emotional concepts and skills
- ☐ behavior in a group setting
- ☐ storytime and library rules and routine
- ☐ I am unsure about the types of learning that are occurring in my storytime
- ☐ I don't feel that any learning occurs in my storytime
- ☐ Other:

Question 35.
In your opinion, what type of experience/environment should storytimes provide for young children? (check one answer)

- ○ play-based educational experience that supports school readiness
- ○ play-based educational experience that support lifelong learning
- ○ play-based educational experience that supports school readiness and lifelong learning
- ○ academic-based educational experience that supports school readiness
- ○ academic-based educational experience that support lifelong learning
- ○ academic-based educational experience that supports school readiness and lifelong learning
- ○ purely entertainment
- ○ Other:

Question 36.
If you feel storytimes should offer an educational experience, what types of learning do you feel they should encourage? (choose all that apply)

- ☐ early literacy learning
- ☐ learning across all domains of child development
- ☐ behavior in a group setting
- ☐ executive function and self-regulation skills
- ☐ STEM learning
- ☐ social/emotional skills
- ☐ gross and fine motor skills
- ☐ Other:

Question 37.
In your opinion, what type of experience/environment should storytimes provide for caregivers of young children?

- Caregivers aren't present at my storytimes
- Storytime doesn't need to provide an experience for the caregivers
- Storytime should help caregivers learn how to support their child's learning and development
- Other:

Question 38.
Is there anything else you would like to share about your storytimes?