

Early Literacy in Library Storytimes: A Study of Measures of Effectiveness

Kathleen Campana, J. Elizabeth Mills, Janet L. Capps, Eliza T. Dresang, Allyson Carlyle, Cheryl A. Metoyer, Ivette Bayo Urban, Erika N. Feldman, Marin Brouwer, Kathleen Burnett, and Bowie Kotrla

ABSTRACT

Across the nation, librarians work with caregivers and children to encourage engagement in their early literacy programs. However, these early literacy programs that libraries provide have been left mostly undocumented by research, especially through quantitative methods. Valuable Initiatives in Early Learning that Work Successfully (VIEWS₂) was designed to test new ways to measure the effectiveness of these early literacy programs for young children (birth to kindergarten), leveraging a mixed methods, quasi-experimental design. Using two innovative tools, researchers collected data at 120 public library storytimes in the first year of research, observing approximately 1,440 children ranging from birth to 60 months of age. Analysis of year-one data showed a correlation between the early literacy content of the storytime program and children's outcomes in terms of early literacy behaviors. These findings demonstrate that young children who attend public library storytimes are responding to the early literacy content in the storytime programs.

Storytimes have long been an iconic part of children's services at the public library. The historical version of storytime, story hours, was created in the 1940s to expose children to books and to support a love of reading in young children. In the mid-1950s, librarians began to place an active emphasis on using storytimes to support literacy in young children (Albright, Delecki, and Hinkle 2009). More than 60 years later, storytimes continue to focus on supporting children's early literacy skills and serve as the pillar for a large array of learning-focused library programming designed to reach children from the ages of birth to kindergarten. In fact, 61.5 % of 3.57 million programs provided by public libraries were designed for children

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(Grimes et al. 2013). While libraries may offer many different types of children's programs across the nation, storytimes are the one program that can be consistently found in most libraries.

Currently, libraries are promoting their storytimes as programs that support the early literacy skills of children as well as helping to provide other school-readiness experiences. Storytime providers are designing storytimes that contain a multitude of activities, including books, songs, finger plays, crafts, group activities, and playtime. These activities help to support various types of learning while still being developmentally appropriate (Albright et al. 2009) and maintaining the fun, enjoyable qualities crucial to informal learning environments (Ghoting and Martin-Diaz 2006). Because storytimes are designed by the storytime providers to meet their specific communities' needs, their format and contents can be very diverse from library to library. Due to this diversity, libraries lack a broader understanding of how to identify and measure the actual early literacy outcomes they believe are occurring in storytimes.

Storytimes and other library programs for young children have been left largely undocumented because empirical research of library services for young children is uncommon. There seems to be a general agreement that these programs are valuable without a precise understanding of their outcomes. Experiences in these programs are likely to allow children to learn and practice emerging early literacy skills (Celano and Neuman 2001); however, additional evidence-based research is still needed to assert the library as a meaningful early literacy partner.

Library systems in Washington State are among the practitioners and information policy-makers nationwide struggling to find accurate and meaningful ways to measure the impact these programs are having on children. One recurring theme centers on finding ways to measure whether an early literacy focus of library storytimes has an impact on children's early literacy skills. This need serves as a basis for the study described here, which endeavored to answer the overall research question: Does the early literacy focus of public library storytimes make a difference in the early literacy skills of the children who attend?

Literature Review: The National Early Literacy Movement and Libraries

Reading is now widely accepted as an emerging process originating in early childhood (Lonigan, Burgess, and Anthony 2000). Literature within this interdisciplinary area is retrieved through a couple of keywords, for example, "emergent literacy" and "early literacy." There are distinctions in these terms; however, for the purpose of this article, the term "early literacy" will be used to collapse both terms.

The increased focus on early literacy outcomes stems partly from research that indicates that major disparities in literacy and language abilities at kindergarten entry (Jacobson-Chernoff et al. 2007; Murray and Harrison 2011) generally persist into the elementary school grades. Children who develop strong reading skills continue to become better readers while children with poor skills continue to fall behind (Stanovich 1986), a phenomenon often referred to as "the Matthew Effects in reading." Betty Hart and Todd R. Risley (1995) found that at age 3, children from families on welfare had smaller vocabularies than those from

professional families, and for those same children, the differences in vocabularies at age 3 were closely related to differences in child outcomes at age 9.

The National Early Literacy Panel (NELP) reviewed empirical early literacy research to discover the factors that support early literacy development. NELP identified alphabetic knowledge (knowing the letters of the alphabet), phonological awareness (sensitivity to sounds), and name writing to be among variables that were consistently and moderately to strongly predictive of later conventional literacy outcomes (NELP 2008). Regardless of their emphasis on early literacy-focused programs, libraries were left out of the NELP report because of the lack of empirical research examining the early literacy outcomes of their programs.

While researchers have gained ground in understanding some of the foundational factors that impact long-term literacy development, the combination of these factors for literacy success is still not well defined. The NELP report emphasizes letter and sound knowledge in early literacy skills, but according to William H. Teale, Jessica L. Hoffman, and Kathleen A. Paciga (2010), this emphasis cannot be taken as justification to focus solely on these skills and neglect other crucial skills, such as comprehension, oral language, and vocabulary, which also contribute to literacy achievement.

Libraries have long recognized the need to emphasize a wide range of early literacy skills in order to have a strong impact on children's early literacy outcomes. In 2000, the Public Library Association (PLA) and the Association for Library Services to Children partnered with the National Institute of Child Health and Human Development to develop a joint early literacy project called Every Child Ready to Read (ECRR₁) as a way to begin to address these early literacy needs for libraries and the parents and other caregivers that they serve. ECRR₁, a research-based parent-caregiver program model developed by early literacy experts Grover Whitehurst and Christopher Lonigan (Meyers and Henderson 2004), became a foundational early literacy training framework emphasizing six early literacy skills: print awareness, letter knowledge, phonological awareness, vocabulary, narrative skills, and print motivation. In 2008, Susan Neuman and Donna Celano were commissioned by the American Library Association and PLA to evaluate ECRR₁ (Neuman and Celano 2010), which led to the second edition, ECRR₂. ECRR₂ shifted the presentation of the six early literacy skills from ECRR₁ to a framework of five practices (singing, talking, reading, writing, and playing) and six early literacy components (oral language, vocabulary, background knowledge, print conventions/awareness, letter knowledge, and phonological awareness).

Regardless of the emphasis on early literacy training with ECRR₁ and ECRR₂, there have been very few experimental or quasi-experimental studies conducted on the impact that library connections have on children's early literacy development. Although qualitative early literacy studies have been conducted within libraries, (McKechnie 2006; Becker 2012) many activities and methods for including early literacy in library programs are still informed by studies conducted outside libraries (Stooke and McKenzie 2011). For example, previous research has identified home literacy-related activities for young children that help promote

children's reading and writing development (Evans, Shaw, and Bell 2000; Sénéchal 2006; Phillips and Lonigan 2009). Some of these research-based home literacy-related activities transfer well into informal learning environments.

Additional research design considerations, not commonly associated with formal learning environment research, make it difficult to apply an experimental research lens to the informal learning environment of libraries. Libraries may market a storytime for preschoolers; however, unlike a formal classroom setting in which children's ages are clearly defined or controlled, library programs may include younger or older children. In addition to the variability in ages, inconsistencies in group size, individual attendance, and the fact that the children may visit the library with someone other than their primary caregiver are all factors that complicate data collection and analysis. Public library storytimes do not follow a prescribed curriculum, as do more formal school environments. Teacher certification is regulated by the state; however, public librarians may work within early literacy environments without certification or any formal early childhood education or prior knowledge of the discipline. Despite the additional complexities in designing informal learning environment studies, research investigating the important role of public libraries in children's literacy development is expanding (Celano and Neuman 2001; Campana and Dresang 2011).

The Study

Valuable Initiatives in Early Learning That Work Successfully (VIEWS₂) was designed in response to the need for ways to measure the effectiveness of public library early literacy programs for young children (0–60 months). The overall research question guiding the study sought to discover whether the early literacy focus of public library storytimes makes a difference in the early literacy skills of children who attend storytime. This research, supported in part by the Institute of Museum and Library Services (IMLS), was developed with 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; the Washington State Library; and Thrive Washington.

This article will present the methodology and findings from the first year of the VIEWS₂ grant, which established a baseline picture of the early literacy content that storytime providers are including in their storytime programs as well as the early literacy behaviors that children are demonstrating while attending these programs. These research questions guided the first year:

- What types of early literacy content are storytime providers incorporating into public library storytimes?
- What types of early literacy behaviors are children demonstrating when attending public library storytimes?

- How can we evaluate early literacy outcomes in public library storytimes for children?

The 2-year study used a mixed-method, quasi-experimental design to achieve the goal of providing objective evidence that library storytimes are making a difference in children's early literacy skills.¹

Participants

In order to represent a wide variety of public libraries, the participants for the study were selected from across the state of Washington (fig. 1). Libraries were selected to participate, using stratified sampling, from more than 300 public libraries that belong to the ELPLP. Researchers sent a confidential invitation to all ELPLP storytime providers who offered children's storytimes on a regular basis, requesting volunteers to participate in the study. The libraries that the volunteers represented were classified into three strata, based on the total number of registered borrowers in their library systems: small (0–100,000 registered borrowers), medium (100,001–250,000 registered borrowers), and large (>250,001 registered borrowers).² Thirteen libraries were randomly selected from each of the large and medium groups of libraries, and 14 were randomly selected from the small group for a total of 40 libraries.

From the storytime providers who volunteered to participate, one provider was randomly selected from each of the 40 libraries. Thus, 13 storytime providers from each of the large and medium groups of libraries and 14 from the small group made up a total participant group of 40 storytime providers. These 40 storytime providers completed a survey to providing information about their education, work history, and training. Of the 40 storytime providers, 7 had a bachelor's degree, 3 had a high school diploma, and 30 had a master's in library science. Six of the 40 storytime providers had been working as a children's storytime provider for less than 3 years, 7 had been a children's storytime provider for 3–5 years, and 27 had been a children's storytime provider for more than 5 years. Eighteen storytime providers had completed ECRR1 training, 2 had received ECRR2 training, 4 had completed both ECRR1 and ECRR2 training, and 15 had not received any of the ECRR trainings. All of the storytime providers said that they use early literacy strategies in storytime.

The sample of children in the study was made up of the children who attended the storytime. All children within the age range targeted by the storytime were included in the storytime observation. Researchers did not collect any demographic or identifying information about the children at the storytime observations. Across the 120 storytime observations in the first year, researchers observed an approximate total of 1,440 children.

1. As this article focuses on the first year of the research, the quasi-experimental portion of the study will be presented in a subsequent article.

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

Measures

To address the overall research question—Does the early literacy focus of public library storytimes make a difference in children’s early literacy skills?—the study needed to employ valid and reliable observation tools that would help capture the early literacy content of storytimes. To achieve this, the study utilized two tools whose purposes and design are situated in research and literature: Benchmarks Curricular Planning and Assessment Framework (BCPAF) and Program Evaluation Tool (PET).³ These tools were designed to enable data collection in group settings where participants may differ from week to week (Dresang 2013).

BCPAF was designed to examine the early learning that is occurring within informal learning environments (Feldman 2010). It builds on Washington State’s Early Learning and Development Benchmarks (Kagan et al. 2005) as a framing rubric for an assessment approach that uses behaviors or indicators to understand the learning that is occurring in groups of children, age birth to 5 years, attending programs in informal learning environments. BCPAF was used during the storytime observations to observe the children’s behavior at a group level. As BCPAF is a group-level analysis tool, it does not provide for data collection that tracks individual children. While BCPAF covers five different child development domains, only the language, literacy, and communication domain was used for this study. This was done for two reasons:

1. Though public library storytimes typically work to support learning across multiple domains of child development, in order to manage the scope of the study, the emphasis was placed on early literacy.
2. Through storytimes, storytime providers offer a valuable introduction to literacy and preliteracy skills for children during the critical first 5 years of life, yet they have not had the tools or the evidence that would enable them to advocate for their role as leaders in literacy development for young children.

The BCPAF observation tool also informed the development of the second research tool used in the study: PET. The VIEWS2 researchers created PET to mirror the language, literacy, and communication portion of BCPAF. The tools, PET and BCPAF, have similar formats, and PET was designed to complement BCPAF. Intended to examine the practitioner contribution to early literacy content in programs in informal learning environments, PET was used in this study to observe early literacy indicators demonstrated by the storytime provider leading the storytime program.

PET and the language, literacy, and communication domain in BCPAF are organized into three age ranges: birth to 18 months, 18 to 36 months, and 36 to 60 months. Within the three

3. Both tools were developed and tested by the researchers.

Table 1. Number of BCPAF and PET Goals and Indicators

Tool	B to 18 Months	18 to 36 Months	36 to 60 Months
BCPAF goals (indicators)	17 (69)	17 (83)	17 (86)
PET goals (indicators)	13 (50)	16 (74)	17 (85)

age ranges, both tools are organized into several goals related to early literacy concepts (table 1). Each goal includes several indicators (behaviors) that relate to the broader early literacy concept reflected in the goal (table 2). Using the tools for observation involves taking field notes while performing the observation and then using the field notes to code for the indicators associated with each goal. Because BCPAF is intended for group-level analysis, the researcher conducts a frequent scan of participants during the observation, working to ensure that many participants are included in the observation. In addition, to contribute to BCPAF's group-level analysis, an indicator is coded as observed if at least one participant exhibits that particular indicator.

MLIS Student Researchers

To complete data collection in 40 libraries across the state of Washington, graduate students in the master of library and information science (MLIS) program at the University of Washington's Information School participated in the study as student researchers through com-

Table 2. Example of a BCPAF and PET Goal along with Selected Indicators

Vocabulary Goal 58: Children use receptive vocabulary and comprehension Goal 61: Children demonstrate comprehension and meaning in language	
36 to 60 Mos. BCPAF Indicator	36 to 60 Mos. PET Indicator
Distinguishes between real and made-up words	Contrasts real and made-up words to prompt children to talk about differences between what words are real and what are made up
Responds to questions with verbal answers or gestures	Asks questions that may elicit short verbal answers or gestures that demonstrate that children are following the story/activity/ conversation
Extends/expands the thought or idea expressed by another	Uses strategies to assist children in having a conversation by extending/expanding thoughts or ideas expressed by others in regards to a story, book, or song
Engages in conversation that develops a thought or idea (e.g., tells about a past event)	

Note.—To view other goals and indicators, please visit the VIEWS2 website at <http://views2.ischool.uw.edu>.

pletion of a two-quarter research-in-action course (Evans et al. 2013). The course was intended to provide students with both a foundation in research methods and “authentic practice” (Evans et al. 2013). Using BCPAF and PET, student researchers were trained to objectively observe programs, take field notes on live observations, and practice coding by attending storytimes at libraries not participating in the study. The student researchers were provided with coding manuals, which included rules on coding the various indicators.

At the end of the first quarter, the student researchers had to pass a reliability assessment in order to collect data for the study, which began the following quarter, and to receive credit for the course. Percent agreement was used to analyze the students’ reliability. They were required to score above 79% agreement with the video keys to be considered reliable. Using percent agreement, the students, in the first year, had an average of 81% intercoder reliability on BCPAF and 82% on PET. Once the students completed the course and the reliability assessment, they were sent to collect storytime observation data at participating libraries.

Data Collection

Prior to the study, the storytimes across the state were found to be very diverse, having different lengths and different types of activities. Therefore, it was necessary to establish a general uniformity to the storytime observations in advance. For the purposes of this study, storytimes were defined as beginning with an introduction to the program—whether it be the opening song or the storytime provider’s introduction. The observation continued for no more than 30 minutes following the introduction and was not to include any playtime or crafting activities.⁴

A team of 22 researchers, including student researchers and the core research team, observed 3 storytimes in each of the 40 libraries for a total of 120 storytimes in the first year. Three storytimes were observed at each library to mitigate the dynamic nature of informal learning environments. Each researcher was assigned to a library so that the same researcher coded all three storytimes at the assigned library. The observations were completed in the period from March to May. The researcher worked with the storytime provider to schedule the three observations during the 3-month period. The storytimes were divided into four categories by the targeted audience of the program: birth to 18 months (baby storytimes), 18 months to 36 months (toddler storytimes), 36 months to 60 months (preschool storytimes), and birth to 60 months (family storytimes). Of the 40 storytime providers, 7 offered baby storytimes, 9 offered toddler storytimes, 22 offered preschool storytimes, and 2 offered family storytimes.

The core research team designed procedural manuals to standardize the data collection process across multiple data collections and data collectors. At each observation, the assigned

4. Many of the baby storytimes were only 20 minutes in length.

researcher informed parents and caregivers of the presence of video cameras, the goals of the research, and the aggregate nature of the data collection and to assure them that the research met the University of Washington's standards for confidentiality. The researcher conducted group-level observations of the children attending each storytime in real time and took qualitative field notes. The researcher continuously scanned the room to ensure that all the children were observed. While the researcher was performing the live observation, two video cameras were also used to record each observation—one was videoing the children, and the other was videoing the storytime provider. The video camera recording the children was set up to capture the maximum number of children in its field.

In order to limit the observations to the age ranges targeted by the storytime, researchers were instructed to code only behaviors that were exhibited by children who fell within the target age range. Since specific demographic information that might enable quick age identification was not collected, modules on child development were included in the research course to equip the researchers with the ability to assess age based on visual inspection using only the child's speech, behavior, and size. If uncertain about the age of a child, researchers were instructed to age the child up to the next level.

Following the observation, the content of the storytime program was coded once with PET using field notes taken from the video of the storytime provider presenting the storytime. The children's behaviors were coded twice using BCPAF. One coding was done from field notes of the live observation of the children, and one coding was done using field notes taken from the video of the children attending storytime. This redundancy covered the likelihood that environmental scans, whether done live or over video, are unlikely to capture everything. The data included in this article are from the video coding of BCPAF.⁵ With all coding, both BCPAF and PET, the researcher took field notes of the observations and then performed quantitative analysis using BCPAF and PET. In most cases, one coding sheet from both BCPAF and PET, which matched the target age of the storytime, was used (e.g., B-18 coding sheet for baby storytime); however, family or mixed-age storytimes required multiple coding sheets (one for each age group in attendance).⁶ These separate coding methods and instances were used to provide a holistic, mutually supportive picture of each storytime.

Results

The results from BCPAF and PET yielded quantitative profiles of the early literacy content of storytimes and of children's early literacy behavior in public library storytimes. The BCPAF and PET data were analyzed in the same manner using two levels of analysis: the goal level

5. Differences between the video coding and the live coding of BCPAF are an area for future analysis.

6. As a result of the multiple coding sheets required for the mixed-age storytimes, the *N* for the storytime observations is 150.

and the indicator level.⁷ The goal-level analysis focused on the goals that were met; essentially, the goals that contained indicators that were coded for during the observations. The BCPAF data and PET data for each library were each aggregated across the three observations and then across the 40 libraries. PET and BCPAF were also analyzed together, using Pearson's *r*, to look for a correlation between the two complementary data sets.

Children's Early Literacy Behavior at Storytime (BCPAF)

Examining the BCPAF results by themselves provides insight into the early literacy skills that children are demonstrating in storytime. Table 3 shows the percentage of storytimes in which behaviors from each goal were observed. The table breaks the storytimes down by age to establish which goals were observed with each age range. The BCPAF data help to show that children are demonstrating a wide variety of early literacy behaviors while attending storytime. For birth to 18 month storytimes, 12 of the 17 BCPAF goals were observed in over 50% of the storytimes. For 18 to 36 month storytimes, 9 of the 17 BCPAF goals were observed in over 51% of the storytimes. For 36 to 60 month storytimes, 10 of the 17 BCPAF goals were observed in over 56% of the storytimes.

Early Literacy Content in Storytime Program (PET)

Examining the PET data by themselves provides insight into the early literacy content that storytime providers are incorporating into their storytime programs. Table 4 shows the percentage of storytimes in which behaviors demonstrating each goal were observed during the program. The table presents storytime data by age to establish which goals were observed with each age range. The PET data help to demonstrate that storytime providers are including a wide variety of early literacy skills in their storytime programs. For birth to 18 month storytimes, 11 of the 13 PET goals were observed in over 67% of the storytimes. For 18 to 36 month storytimes, 12 of the 16 PET goals were observed in over 51% of the storytimes. For 36 to 60 month storytimes, 9 of the 17 PET goals were observed in over 65% of the storytimes.

Putting It All Together

Overall, when looking at BCPAF and PET together, the analysis found that there was a relationship between the BCPAF results and PET results. This relationship was examined by determining the Pearson's *r* for the overall PET and BCPAF scores. The results showed a strong positive relationship between the PET and BCPAF scores ($r = 0.803, p < 0.01$), therefore

7. This was possible because BCPAF and PET were designed to mirror each other in design and format.

Table 3. Percentage of Storytimes Coded for Each BCPAF Goal

Goal Description	Birth to 18 Months	18 to 36 Months	36 to 60 Months
	N = 30 (%)	N = 39 (%)	N = 81 (%)
Vocabulary Goal 58: Children use receptive vocabulary and comprehension	93	97	93
Vocabulary Goal 59: Children use expressive vocabulary	90	51	56
Grammar and Syntax Goal 60: Children demonstrate progression in grammar and syntax	17	51	83
Comprehension Goal 61: Children demonstrate comprehension and meaning in language	77	59	99
Expressive/Oral Language Goal 62: Children use language for a variety of purposes	100	33	99
Listening Goal 63: Children demonstrate an understanding of language by listening	93	100	98
Oral and Written Communication Goal 64: Children communicate effectively	90	54	100
Conventions or Social Communication Goal 65: Children understand and use the conventions of social communication	50	69	88
Reading Goal 66: Children demonstrate phonological awareness	50	82	69
Reading Goal 67: Children demonstrate awareness of the alphabetic principle	67	33	28
Reading Goal 68: Children demonstrate awareness of the print concepts	67	31	31
Reading Goal 69: Children demonstrate comprehension of printed material	60	46	63
Reading Goal 70: Children demonstrate awareness of written materials for a variety of purposes	20	41	9
Reading Goal 71: Children demonstrate appreciation and enjoyment of reading	73	62	14
Writing Goal 72: Children demonstrate alphabet knowledge	0	21	24
Writing Goal 73: Children use writing skills and demonstrate knowledge of writing conventions	0	3	11
Writing Goal 74: Children use writing for a variety of purposes	0	0	1

Note.—Total N equals 150 because of the multiple coding sheets required for the mixed-age storytimes. A goal is coded as observed if at least one indicator is observed.

Table 4. Percentage of Storytimes Coded for Each PET Goal

Goal Description	PET Birth to 18 Months N = 30 (%)	PET 18 to 36 Months N = 39 (%)	PET 36 to 60 Months N = 81 (%)
Vocabulary Goal 59: Children use expressive vocabulary	100	77	65
Grammar and Syntax Goal 60: Children demonstrate progression in grammar and syntax	90	85	72
Expressive/Oral Language Goal 62: Children use language for a variety of purposes	90	21	73
Listening Goal 63: Children demonstrate an understanding of language by listening	NA	100	68
Oral and Written Communication Goal 64: Children communicate effectively	93	87	100
VoCom Goal 58/61: Children use receptive vocabulary (Goal 58) and demonstrate comprehension and meaning in language (Goal 61)	100	97	99
Conventions or Social Communication Goal 65: Children understand and use the conventions of social communication	67	95	99
Reading Goal 66: Children demonstrate phonological awareness	93	100	96
Reading Goal 67: Children demonstrate awareness of the alphabetic principle	87	59	33
Reading Goal 68: Children demonstrate awareness of the print concepts	83	26	33
Reading Goal 69: Children demonstrate comprehension of printed material	83	87	75
Reading Goal 70: Children demonstrate awareness of written materials for a variety of purposes	13	64	1
Reading Goal 71: Children demonstrate appreciation and enjoyment of reading	87	31	26
Writing Goal 72: Children demonstrate alphabet knowledge	NA	51	31
Writing Goal 73: Children use writing skills and demonstrate knowledge of writing conventions	NA	NA	16
Writing Goal 74: Children use writing for a variety of purposes	NA	69	1

Table 4 (Continued)

Goal Description	PET Birth to 18 Months N = 30 (%)	PET 18 to 36 Months N = 39 (%)	PET 36 to 60 Months N = 81 (%)
Writing Goals 72, 73, 74C: Children demonstrate alphabet knowledge (Goal 72), use writing skills and demonstrate knowledge of writing conventions (Goal 73), and use writing for a variety of purposes (Goal 74)	13	NA	NA
Indicators related to Oral and Written Communication (G64) and Writing (G72, G74)	NA	10	11

Note.—NA (not applicable) is listed for the PET goals that do not have corresponding behaviors to the BCPAF goals. Total *N* equals 150 because of the multiple coding sheets required for the mixed-age storytimes. A goal is coded as observed if at least one indicator is observed.

demonstrating a positive correlation between the storytime provider's early literacy program content and the children's early literacy behaviors. This correlation also demonstrated that BCPAF and PET could be used together to reliably observe and code early literacy elements demonstrated by the storytime provider and the children in public library storytimes.

Discussion

The first year of research begins to address the study's overall question: Does the early literacy focus of public library storytimes make a difference in children's early literacy skills? By using BCPAF to directly observe the children attending the storytimes at a group level, the study was able to demonstrate that children are exhibiting early literacy behaviors during the storytime. Observing the storytime content, using PET, demonstrated that the storytime providers are inserting early literacy content into their storytimes. Analyzing the data from BCPAF and PET together established that there is a strong correlation between the BCPAF and PET data. That correlation can be interpreted to show that there is a relationship between the early literacy content of the storytime and the children's early literacy behavior. When storytime providers offer early literacy content, corresponding early literacy behaviors can be observed in the children.

Two of the research questions guiding the first year were in response to the need to understand what types of early literacy activity are occurring during storytime, including in the storytime content and in the children's behaviors. The PET data demonstrate that storytime providers are incorporating many types of early literacy skills in their storytime content. The BCPAF data demonstrate that the children are exhibiting many types of early literacy behaviors while attending storytime.

Findings that emerged from examining the types of early literacy skills found in storytime content and in the children's behaviors in storytimes are that while a wide variety of early literacy skills are present, a relative lack of writing skills for all ages and alphabetic principle for toddlers and preschool children (18 months–60 months) are present at storytime, with alphabetic principle occurring in fewer than 33% of the toddler and preschool storytimes observed and writing skills occurring in even fewer storytimes.⁸ These absences raise concerns given that skill with alphabetic principle and name writing, along with phonological awareness, are some of the stronger predictors of later reading success for children (NELP 2008). The relative absence of alphabetic principle and writing skills in storytime may be due to lack of training for the storytime provider, group size, limited budget for supplies, and space characteristics. Storytime providers, even with a master's in library and information science, typically lack specific training in child development, early literacy, and early learning that could expand understanding of how to incorporate and support alphabetic principle and writing skills. The group size may also impact the inclusion of both of these skills because with a larger group the storytime provider does not have the time or opportunity to monitor, respond, or interact with the children on an individual basis. Limited budget for supplies can curtail the activities a storytime provider can use to encourage alphabetic principle and writing skills, as alphabetic-principle activities can often require letters or other supplies, and writing skills often need craft supplies or other objects that utilize fine motor skills. The characteristics of the space where storytimes are held may also hinder the addition of writing skills because, without adequate space or surfaces, it can be tricky to provide opportunities to allow children to practice the act of writing.

The BCPAF and PET data also help to answer the final research question guiding the first year of data collection. Due to the relative lack of research focused on library storytimes, the researchers wanted to gain an initial understanding of how early literacy outcomes for children attending public library storytimes could be evaluated. Given the complexities with participant attendance in programs at informal learning environments, it was important to understand how outcomes can be evaluated at the group level instead of focusing on individual children. The successful use of BCPAF demonstrates that it can be used to evaluate the early literacy outcomes at the group level for children attending public library storytimes. Another significant finding from the first year was that these tools could be used successfully for research in an informal learning environment to paint a cohesive picture of programs that have previously been difficult to evaluate because of their dynamic nature. With BCPAF and PET, 22 researchers were able to pass reliability assessments on the two tools to reliably code 120 storytimes in the first year. The data that emerged from these 120 observations help to provide a deeper insight into the nature of early literacy in public library storytimes.

8. The writing skills percentages may appear lower than they actually are due to the fact that craft time and play-time were eliminated from the storytime observations.

As with any study, there are limitations with the findings described here. While other environments and factors that influence early literacy, such as home and other early learning programs, were not included in the study, they do have some influence on the children's observable early literacy behaviors, therefore possibly influencing the BCPAF findings. Both the BCPAF and PET findings may also have been constrained by the strict observation criteria. By restricting the storytime observations to a 30-minute period following the introduction, some components such as craft time and playtime were left out at some libraries. In addition, even with the reliability assessment, coding manuals, and procedure manuals, the number of researchers may have contributed to slight differences in coding across libraries. Finally, the informal and diverse nature of the public library and the size and geographic distribution of the libraries included in this study may limit the ability to generalize the results to other settings.

Conclusion

This article presents the baseline, descriptive findings of the first year of a 2-year study examining the impact of informal early literacy learning on children in library storytimes. The findings show that (1) storytime providers are incorporating many types of early literacy content into their storytime programs; (2) children are exhibiting many types of early literacy behaviors when attending library storytimes; (3) there was a positive correlation between early literacy content delivered by storytime providers and children's early literacy behaviors; and (4) the tools used in this study could be used to evaluate the early literacy outcomes of public library storytimes.

These findings help to set the stage for the quasi-experimental study that occurred in the second year of research. While still focused on the overall goal of providing objective evidence that library storytimes are making a difference in children's early literacy skills, the second year was guided by the overall research question: How, if at all, can we increase the early literacy outcomes for young children in public library programs? The methodology and findings from the second year will be presented in a subsequent article.

The implications of the findings from the first year of this study are of critical importance to early literacy development in library storytimes. While storytime providers have believed for years that storytimes are important to children's early literacy development, this is the first large-scale study that effectively assesses their impact on early literacy in a comprehensive, systematic, valid, and reliable way.

This study also provides researchers and libraries with a way to further explore and evaluate early learning in storytimes by providing valid and reliable tools as well as a model of how to apply other states' early learning frameworks to further understand early learning in public library storytimes.

Further research is needed to comprehensively aid in assessment and evaluation of library storytimes, since in addition to early literacy, storytimes work to support learning across many domains of child development. However, this study serves as a crucial first step in demonstrating the significant role of public libraries in the development of early learning in young children. It is therefore necessary to highlight the principal finding of the first year: children who attend public library storytimes respond to the early literacy content that the storytime provider delivers during the storytime, therefore demonstrating that storytime providers, through public library storytimes, are encouraging a wide variety of early literacy behaviors in young children attending the programs.

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Kathleen Campana: doctoral candidate, Information School, University of Washington. Campana has a background in school and corporate libraries. Her research focuses on using mixed methods to understand the learning that occurs for children and youth in informal learning environments and the role that adult engagement and technology can play in that learning. She served as a researcher on the VIEWS2 grant for all 4 years. E-mail (corresponding author): kcampana@uw.edu

J. Elizabeth Mills: doctoral candidate, Information School, University of Washington. Mills is also an MLIS graduate from the Information School, University of Washington. Mills has a background in children's literature as an editor and author. She studies the role of culture in the production of public library storytimes. She served as a researcher on the VIEWS2 grant. E-mail: jemills1@uw.edu.

Janet L. Capps: assistant director of the School of Information, Florida State University. Capps has served as a project research consultant throughout the 4 years of the VIEWS2 grant. Her research

experience includes early literacy, community partnerships, and public library collaborations plus expertise in data collection and management and statistical analysis. E-mail: jcapps@fsu.edu.

Eliza T. Dresang: Beverly Cleary Professor in Children and Youth Services, Information School, University of Washington, from 2009 until her death in 2014. Dresang, a longtime professor of library science, devoted her career to literacy and children, revolutionizing the field. Her research, teaching, and service focused on the information behavior and resources of digital youth. She was the principal investigator and impetus behind the VIEWS2 grant until her death. The research team she developed is working hard to realize her vision for VIEWS2.

Allison Carlyle: associate professor, Information School, University of Washington. Carlyle's primary research areas are evaluation and use of online catalogs and foundations of descriptive cataloging. She teaches a course in the history and foundations of librarianship as well as courses in information organization. In an earlier career, Carlyle was employed as a children's librarian at Beverly Hills Public Library. She became co-investigator of the VIEWS2 grant in May 2014. E-mail: acarlyle@uw.edu.

Cheryl A. Metoyer: associate professor emerita, Information School, University of Washington. Metoyer's research interests include indigenous systems of knowledge, with an emphasis on American Indian and Alaska Native tribal nations; information-seeking behaviors in cultural communities; and ethics and leadership in cultural communities. She has published in major research journals, including *College and Research Libraries*, *Library and Information Science Research*, and *American Indian Culture and Research Journal*. The Association of College and Research Libraries honored her book *Gatekeepers in Ethnolinguistic Communities*. She took over as principal investigator of the VIEWS2 grant in May 2014. E-mail: metoyer@uw.edu.

Ivette Bayo Urban: doctoral candidate, Information School, University of Washington. Urban has a background in curriculum and instruction with specialization in learning technologies. She served as a research assistant on the VIEWS2 grant for 2 years. Her main role in the VIEWS2 project has centered around the collaboration and design of the intervention. Her research interests are in the intersection of culture and gender and how that affects digital inclusion, particularly with regard to underrepresented communities. E-mail: ibayo@uw.edu.

Erika N. Feldman: interdisciplinary research scientist, Seattle, Washington. Feldman is interested in learning environments, multidimensional assessment, educational technologies, and community engagement. Her dissertation work, *Benchmarks Curricular Planning and Assessment Framework (BCPAF)*, was used in VIEWS2 to measure the efficacy of early literacy programs serving young children, and she was the lead author on the Program Evaluation Tool (PET) that was developed to examine librarian behavior. E-mail: feldmanerika@gmail.com.

Marin Brouwer: MLIS graduate, Information School, University of Washington. Brouwer has a background in education, literature, and youth services. She has been involved in the VIEWS2 grant for all 4 years. E-mail: mbrouwer914@gmail.com.

Kathleen Burnett: F. William Summers Professor and director of the School of Information, Florida State University. Her research interests include social informatics; gender, race, and ethnicity and

information technology; and disciplinary identity. Her teaching interests include information ethics, information education, digital storytelling, and theory development. Burnett has served as a project research consultant through the first 3 years of the VIEWS2 grant. E-mail: kburnett@fsu.edu.

Bowie Kotrla: associate professor, School of Information, Florida State University. Kotrla's areas of expertise include data analysis, database administration, and information access. She has served as the project statistician throughout the 4 years of the VIEWS2 grant. E-mail: bkotrla@fsu.edu.