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A Meta-Analysis on the Variables of Storybook Reading Relative to Early Literacy  
Development

A Thesis submitted in partial satisfaction  
of the requirements for the degree of

Master of Arts

in

Education

by

Amy C. Allen

August 2016

Thesis Committee:

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The Thesis of Amy C. Allen is approved:

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## ABSTRACT OF THE THESIS

A Meta-Analysis on the Variables of Storybook Reading Relative to Early Literacy Development

by

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Master of Arts, Graduate Program in Education  
University of California, Riverside, August 2016  
Dr. Cathleen Geraghty, Chairperson

Emergent literacy skills have been found to be an important predictor of future linguistic acquisition and academic success. Studies have also shown that children who are consistently exposed to good quality and regular quantities of sound-letter recognition, such as storybook reading, have improved trajectories for attaining literacy skills prior to beginning kindergarten. The underlying factor is the quality of storybook reading rather than the quantity. A seminal meta-analysis conducted by Scarborough and Dobrich (1994) found that parent-preschooler reading experiences explained only 8% of the variance in early literacy achievement. Shared reading supports oral language and non-language developments, but being read to is not enough (Meyer et al., 1992). Engaging children with the explicit purpose of expanding their literacy skills is essential for their cognitive, literacy, and numeracy development (Norris & Anderson, 2008). This meta-analysis was designed to examine the effects of specific variables impacting the overall effectiveness of storybook reading as an intervention in developing emergent literacy

skills, specifically the effects of explicit instruction during storybook reading. Results showed that this additional factor of parents or teachers providing explicit instruction during storybook reading has been shown to have a larger effect size than storybook reading alone.

*Keywords:* storybook reading, explicit, emergent literacy skills

## TABLE OF CONTENTS

Abstract .....	iv
Introduction .....	1
Methods .....	12
Results .....	18
Discussion .....	20
References .....	24
Table 1.1 .....	30
Table 1.2 .....	31

## **A Meta-Analysis on the Variables of Storybook Reading Relative to Emergent Literacy Skill Development**

Emergent literacy skills have been found to be a foundational precursor to the development of critical linguistic acquisition and reading development (National Research Council, 2002). Prior to beginning kindergarten, shared reading between a parent and child can have a number of positive benefits that can promote language development (Sénéchal, Pagan, Lever, & Ouellette, 2008). The National Early Literacy Panel (NELP, 2009) found that conventional reading and writing skills that begin developing from birth to age five have a clear and consistently strong relationship with the development of later conventional literacy skills.

The NELP (2009) found that parent and home program interventions, in addition to others, were effective as an instructional practice in imparting statistically significant effects across a broad spectrum of early literacy skills. The National Early Literacy Panel (NELP, 2009) found six major variables that represent early literacy skills that had medium to large predictive relationships with later literacy development: (1) alphabet knowledge, (2) phonological awareness, (3) rapid automatic naming (RAN; i.e., the ability to rapidly name a sequence of random letters or digits, (4) RAN of objects or colors (i.e., ability to rapidly name a sequence of repeating random sets of pictures of objects or colors such as “car”, “tree”, “house”, “man”, (5) writing or writing names (i.e., the ability to write letters in isolation on request or to write one’s own name), and (6) phonological memory (i.e., the ability to remember spoken information for a short period of time) (NELP, 2009). In addition to these six variables, the NELP (2009) also identified



five additional important variables: (1) concepts of print, (2) print knowledge, (3) reading readiness, (4) oral language, and (5) visual processing (i.e., the ability to match or discriminate visually presented symbols such as letters). These variables have all been found to be predictive of later literacy achievement for preschoolers and kindergarteners.

### **Shared Storybook Reading**

Shared storybook reading has historically been a cultural icon representing a gateway to literacy (National Children's Reading Foundation, 2007; Pelligrini, 1991). The simple process of reading to a child through shared storybook reading can have a positive and lasting impact on emergent literacy development, but a critical point that has been receiving less attention has been what specific factors of the storybook reading experience particularly contribute to predicting future literacy outcomes.

Research has shown that shared storybook reading, can have one of the most sizeable positive influences for school-based literacy learning compared to other home-based literacy activities (Sénéchal & Young, 2008; Bus, van Ijzendoorn, & Pellegrini, 1995; Scarborough & Dobrich, 1994; Sénéchal & LeFevre, 2001). Evidence suggests that the number and nature of parent-child joint book reading experiences during early childhood sets the stage for future academic achievement (Cochran-Smith, 1983; Mason & Allen, 1986; Teale, 1981). Studies have also shown that children who are consistently exposed to good quality and regular quantities of sound-letter recognition during shared storybook reading, can have improved trajectories for attaining literacy skills prior to beginning kindergarten, particularly in the areas of vocabulary and morphological awareness (Maynard, Pullen, & Coyne, 2010). Existing evidence suggests that the early

individual differences in literacy skills sustain stability from kindergarten onward (Bryant, Maclean, Bradley, & Crossland, 1990; Butler, Marsh, Sheppard, & Sheppard, 1985; Lonigan et al., 2000; Scarborough, Dobrich, & Hager, 1991; Tunmer, Herriman, & Nesdale, 1988; Wagner et al., 1997). Considering the extant empirical evidence available supporting the positive effects of shared storybook reading as a home literacy activity, there has been limited focus on the specific variables of the activity that could make a more viable impact.

### **Quality over Quantity**

Shared storybook reading between parents and children is often used to categorize informal literacy activities that take place in the home. This perspective of emergent literacy (skills prior to formal literacy) development being an important factor in future reading ability was initially hallmarked by Lonigan and Whitehurst (1998). Prior to this, reading readiness was seen as a solitary unit related to reading achievement (e.g., letter recognition), and was not perceived as a strong contributing factor in children prior to starting kindergarten. Studies by Lonigan & Whitehurst (1998) found that when compared to study groups involving shared storybook reading in the school and at home, home-effects were found to be more significant above and beyond the classroom storybook reading time with the same intervention technique. These differences in shared-reading at home can be a significant contributor to persistent social class differences in oral language and pre-literacy skills due to the varying qualities and opportunities of literacy exposure in the home (Lonigan & Whitehurst, 1998).

Lonigan and Whitehurst proposed a two-domain approach to literacy: (1) outside-in, and (2) inside-out. A reader must be able to decode units of print (e.g., letter recognition) into units of sound (i.e., phonemes), then into units of language, these skills essentially encompass the inside-out domain. The outside-in domain has two main frameworks from which the auditory derivatives must operate in-sync with each other in order to formulate successful reading: (1) context, and (2) semantics. Based on an extensive base of literature providing sufficient evidence on the importance of knowledge on decoding and semantics, this underscores the importance of explicit instruction during shared storybook reading. For example, observational studies of parent-child interactions during shared reading revealed that parents tend to focus on storylines or pictures more so than making explicit references to the actual print (Deckner, Adamason, & Bakeman, 2006). The underlying factor is the quality of storybook reading rather than the quantity. A longitudinal study conducted by Whitehurst and colleagues found that 58% of the variance in reading outcomes in first grade can be accounted for by the child's inside-out skills (i.e., decoding units of print, units of sound, and units of language) at the end of kindergarten. Additionally, the stability in language trajectories reaches 90% of the variance in outside-in skills in kindergarten accounted for by outside-in skills at the end of pre-K. In other words, children who start school behind in these areas are likely to stay behind.

A seminal meta-analysis conducted by Scarborough and Dobrich (1994) on 31 research studies across three decades, focused on the effects of interventions, specifically on the influence of parent-preschooler reading experiences on the development of a

child's language and literacy skills. The results from the study found that parent-preschooler reading experiences explained only 8% of the variance in early literacy achievement. Following this study, Bus and colleagues (1995) conducted a meta-analysis on the intergenerational transmission of literacy, using many of the same studies analyzed in Scarborough and Dobrich's (1994) study. Bus, van Ijzendor, and Pelligrini (1995) found that shared book reading is actually as strong of a predictor of future reading achievement as phoneme awareness, but also confirmed that shared storybook reading accounted for only 8% of the variance in success in learning to read. Following these two studies, there has been increased attention placed on the specifics of the child's literacy environment and what factors have the strongest contributions to the development of emergent literacy skills.

Considering how impactful the simple process of engaging in shared storybook reading as an informal home literacy activity can be, there should be minimal difficulty in applying a few specific variables in shared storybook reading to further enrich its impact. There have been several studies that have highlighted specific areas of literacy skills that have been strongly correlated with shared storybook reading. Leslie and Allen (1999) found that the level of parental involvement in a reading intervention for children in grades one through four who were nonreaders or were behind by one or two grade levels, predicted the child's reading growth. Several studies have found a stable predictive relationship between shared reading and children's vocabulary (Frijters, Barron, & Brunello, 2000; Raikes et al., 2006; Sénéchal, 2006; Sénéchal & LeFevre, 2002). In examining what variables can enhance the overall effectiveness of shared storybook

reading, it is assumed that merely reading storybooks to children may not be sufficient to maximize a child's specific reading skill outcomes, although it is an integral step to predicting future literacy growth. For example, a study by Evans and Saint-Aubin (2005) found that when young children are being read to, their visual attention is fixated on the illustrations and not in accord with the story line or on any of the actual printed text. Current research has been continuing to confirm that parents who do not direct their child's attention to the printed text to teach their children the letter names, sounds, numbers, colors, or word similarities are missing a critical element of enriched high-quality storybook reading. Shared reading supports oral language and non-language developments, but being read to has been shown to be insufficient (Meyer et al., 1992). Engaging children with the explicit purpose of expanding their knowledge, is essential for their cognitive, literacy, and numeracy development (Norris & Anderson, 2008). Passively exposing children through increased frequency of opportunities to play with objects that incidentally have letters and shapes, will not enhance a child's development of alphabetic and numeric concepts.

### **Informal and Formal Shared Storybook Reading**

The heightened expectations of educational achievement by parents and caregivers of children who learn to read at an early age can be restricted or enhanced, contingent on how the family chooses to use the print (Sénéchal, 2006; Sénéchal & LeFevre, 2002; Scarborough, Dobrich, & Hager, 1991). Sénéchal and colleagues (1998) have shown that children can be exposed to two different types of literacy experiences at home: (1) formal, and (2) informal. Informal literacy experiences are inclusive of

developing a child's oral language by focusing on what the story is about, essentially what message the print contains. On the other hand, a formal literacy experience would be focused on the actual orthographic features of print through identification of the specific letters and their associated names and sounds. Both types of experiences have been found to be integral to a child's overall literacy development, but informal experiences have been correlated with receptive language and formal experiences have been predictive of literacy skills. In another seminal study by Levy and colleagues (2006) on 474 children from 48 to 83 months of age, they found that the frequency of active involvement in literacy activities such as printing, reading, and spelling accounted for 24% of the variance in the development of children's early reading development. Levy et al. summarized, "being read books, whether advanced text or more traditional children's books, was uncorrelated with the literacy variables, but activities in which children were directly involved with printing, reading and writing, and to a lesser extent to phonics/phonological sensitivity activities, were related to print knowledge and the ability to manipulate sounds in spoken words." As evidenced by these studies, time is not the integral factor, rather, it's the quality of time spent by parents in explicitly teaching their children literacy skills related to print knowledge.

### **Summary**

As one can see, there are several explicit variables that have been shown to have a strong predictive relationship with early literacy skill development when combined with shared storybook reading. Formal and informal literacy experiences have been found to have significant contributions to early literacy skill development, both of which can be

provided through a shared storybook reading experience. A formal literacy experience would involve providing explicit references to actual print such as directing a child's attention to the printed text to teach imperative literacy concepts (e.g., letter names, sounds, numbers, colors, and word similarities), focusing on the inside-out skills. An informal literacy experience would focus on the outside-in skills such as semantics, which has been strongly predictive of future receptive language. These types of direct involvement with the printing, reading, and writing in a storybook through a shared reading experience have begun to receive increased attention due to its growing body of supportive empirical evidence.

### **Socioeconomic Status**

Recent studies have also shown that a large majority of ethnic-minority and low-income preschool children will experience underdeveloped language and literacy skills when compared with their Caucasian peers (Brooks-Gunn, Rouse, & McLanahan, 2007). Socio-economic status and culturally-rooted perspectives of a young child's readiness for literacy skill acquisition have been shown to be contributors to the variation found in home literacy environments (Heath, 1986). Variables such as a caregivers' responsiveness to their child's expression of emergent literacy abilities and their active involvement in their child's language and literacy-based activities and routines have been found to be strong contributors to the overall health of the home literacy environment (Roberts, Jurgens, & Burchinal, 2005; Sénéchal, LeFevre, Thomas, & Daley, 1998). Rush (1999) found that underdeveloped vocabulary and phonemic awareness skills in

certain ethnically diverse children in a Head Start program were correlated with minimal caregiver supervision and involvement with children.

Throughout all the studies focused on home literacy interventions, storybook reading has been consistently shown to facilitate the development of a child's vocabulary and early language development, two factors that have been found to be important predictors of early reading (Bus, van Ijzendoorn, & Pelligrini, 1995; Raikes et al., 2006; Roberts et al., 2005). In addition to shared storybook reading, other variables found in the home literacy environment such as the number of books at home, visits to the library, the time spent reading with the child, and the child's age at the onset of shared reading, have all been important variables to consider as well in the overall success of storybook reading in predicting a child's future linguistic development (Roberts et al., 2005). Literacy development has been found to be a process that is cumulative and componential, in other words, it is highly influenced by the individual, context, and quality of instruction, all of which are factors that are integral in shaping a child's level of readiness before kindergarten (Lesaux & Geva, 2006). Impairments that may materially affect the regular development of oral and linguistic skills may impede the regular development for some children.

Certain children are pre-disposed to be at a higher risk of failing to meet the literacy demands of a formal academic curriculum due to various contributing factors to limited access and opportunity for literacy skill development in the home environment (e.g., family's income). Despite these economic differences, shared storybook reading has been found to be equally beneficial for all children regardless of socioeconomic



status. In many countries, the importance of the family's role in promoting literacy is operationalized in the intergenerational nature of literacy programs (Nickse, 1990).

### **Family Variables**

Parental involvement has been positively correlated with higher levels of reading achievement during the child's elementary schooling (Dearing, Kreider, Simpkins, & Weiss, 2006), and has also been shown to increase motivation and engagement in the classroom (Gonzalez-DeHass, Willems, & Doan Holbein, 2005). Thus, there has been increased attention placed on ways to further develop a child's level of school readiness, specifically focusing on home-literacy practices.

Despite national and international efforts to ensure that young children "start school ready to learn" (e.g., United States' legislation National Education Goals Panel, 1991), research demonstrates that a significant number of students still start kindergarten lacking crucial pre-literacy skills and experiences, and as a result, continue to fall behind their peers throughout their formative school years as they're left largely underprepared for the pedagogical practices and demands of a school environment (Bayder, Brookes-Gunn, & Furstenberg, 1993; Dickinson & Sprague, 2001). For this reason, a number of researchers have argued the importance of children's early literacy development, giving particular interest to the development period prior to formal schooling (Bates et al., 2006; Clarke-Stewart & Allhusen, 2005; Morrow, 1999; Pressley & Allington, 1999).

### **Current Study**

In response to this pending need for better serving the unique needs of children from varying home environments, studies have shown that storybook reading can be an

effective means of improving the language and communication skill acquisition rate of children in the early literacy phase. Studies have shown that early readers come from homes in which adults read to them on a regular basis and reading materials are readily available (as cited in Rosa-Lugo & Kent-Walsh, 2008). The experience of shared storybook reading for children who are in the emergent literacy skill development phase has been shown to help the development of print concepts, letter identification, vocabulary and storytelling activities (as cited in Lovelace & Stewart, 2007). Shared storybook reading has been shown to result in educational meaningful gains in letter-name knowledge, vocabulary, and concepts of writing and narrative, skills that are pivotal for positive academic outcomes. Despite the extensive research on the effects of storybook reading as intervention for vulnerable populations, there have been limited meta-analyses conducted on the specific variables that contribute to the overall effectiveness of storybook reading, focusing less on quantity, and more on quality (e.g., explicit references to actual print). Based on Sulzby's (1985) emergent reading scale, it was found that American children were inclined to internalize knowledge about the written language register long before they turned into conventional readers.

The following research questions were addressed:

1. Does an explicit training on shared storybook intervention with a teacher and/or parent provide an additive benefit in improving children's language and print-related skills than having no explicit training?

2. Is an explicit storybook reading intervention with a teacher and/or parent training component more strongly related to outcome measures for children of lower socioeconomic status than in middle-class samples?

## **Method**

### **Data Collection**

The following online databases were used: ERIC and JSTOR. The search had a restricted date range of 1980 to 2015 and used the following key terms: “shared storybook reading,” “cross-linguistic,” and “emergent literacy.” The search resulted in 382 abstracts including articles, reports, books, and dissertations. All the abstracts were examined to eliminate the studies that did not meet the exclusion criteria (e.g. studies that did not contain a control group). The following journals were also hand-searched for relevant articles: *Reading Research Quarterly*, *Child Development*, *The Modern Language Journal*, and *Learning Disability Quarterly*.

### **Data Evaluation**

A small group of studies were selected from the larger pool of abstracts. These selected studies utilized randomized experimental designs with control groups in which children received a storybook intervention to improve their linguistic and language acquisition skills. This criterion narrowed the 382 articles to 14 studies. Each of the 14 studies were evaluated on the following inclusion criteria:

1. The study used an interactive, shared reading intervention.
2. The intervention was implemented in the home and/or classroom.

3. Participants had no mental, physical, or sensory handicaps and were nonconventional readers.
4. Outcome variables included at least one objective measure of vocabulary or story comprehension denoting linguistic skill acquisition.
5. The study used a quasi-experimental or experimental design that had randomly assigned children to either an experimental or control group on the individual, school, or classroom level.
6. The studies were published or unpublished, but had to present the results clearly in tables in order to determine effect sizes.
7. Combined home and school interventions were eligible when the study provided separate data for the experimental single teacher group.
8. The study was written in English.

### ***Excluded Studies***

Studies were excluded when the storybook reading intervention was not the main focus, when relevant data for separate interventions were not reported, or if no control group was reported.

### ***Coding and Interrater Agreement***

The areas of each article that were coded were: (a) language of the shared reading session (1 = *English*, 2 = *other*), (b) school type (1 = *preschool*, 2 = *kindergarten*), (c) research methodology (1 = *experiment*, 2 = *quasi-experiment*), (d) publications status (1 = *published*, 2 = *unpublished*), (e) type of intervention program (1 = *dialogic reading in accordance with Whitehurst et al. (1988)*, 2 = *only storybook reading*), and (f)

experiment fidelity (monitoring the implementation of reading techniques and frequency in both control and experimental groups).

Interrater agreement was conducted between the author and a graduate student in a PhD program at the University of California, Riverside on 40% (n=6) of the studies. The minimum threshold for interrater agreement was set at 80%. The interrater agreement for coding was 93% and was 91.5% for study inclusion.

### ***Categorization of Dependent Measures***

The dependent measures were codified into one general category:

- *Emergent Literacy* domain- measures on literacy skills such as name writing or reading, letter naming, and phoneme blending, before school age.

### ***Categorization of Treatment Variables***

Each of the five studies considered for this meta-analysis utilized storybook reading as an intervention to address varying levels of language and linguistic skill acquisition. The components of storybook reading as an intervention were reviewed by Huennekens and Xu (2010); Rosa-Lugo and Kent-Walsh (2008); Lovelace and Stewart (2007); Kent-Walsh, Binger and Hasham (2010); and Bellon, Ogletree and Harn (2000). These studies implicate storybook reading as an effective intervention for early language and linguistic acquisition skills. Storybooks can be a useful medium to establish and maintain joint focus during interactive exchanges between a child and parent or a child and instructor (as cited in Bellon, Ogletree, & Harn, 2000). Storybook reading has been shown to provide a dynamic verbal interaction fostering vocabulary growth and providing a structured framework for communication (as cited in Kent-Walsh, Binger, & Hasham,

2010). Based on the reviews, studies were coded as including storybook reading as an intervention if they referred to the following:

1. Incorporated developmentally and culturally appropriate storylines.
2. Demonstrated the communication interaction strategy during storybook reading time.
3. Storybook reading took place in natural contexts such as in the home or classroom.
4. Demonstrated a generalized application of the skills obtained from the storybook reading intervention.

Any study that included at least three out of the four codes during the treatment phase were considered in the analysis as a storybook reading intervention. Based on the parameters of the studies reviewed, the following moderator variables were selected based on the amount of overlap in the studies to measure their possible relation to the effects of Storybook Reading as an intervention:

- *Parent Training*- any level of parent training that took place in relation to the storybook reading intervention was examined as a critical moderator variable due to any variance it may contribute to the overall effectiveness of the intervention.
- *Family Socio-Economic Status (SES)*- the SES status reported in each study according to the state standards of poverty-level pertaining to the family's annual income;

- *Home language*- child's home language was examined because of its potential correlation to the effects of Storybook Reading as an intervention in eliciting literacy skill development in a targeted language;
- *Home Literacy Exposure*- child's amount of literacy exposure in the home was measured as a moderator variable because of its potential impact on the effect of the intervention.

### ***Effect Size Calculation***

The effect size (ES) was transformed using Hedges' *g* or the standardized difference between the means of two groups. Since sample sizes varied between studies, Hedges' *g* was used to ensure there was an equitable distribution of weight given to studies that had smaller sample sizes compared to ones that had larger (Hedges & Olkin, 1985). In response to the varied sample sizes amongst the studies, each effect size was weighted by one unit, mainly to prevent any studies that had notably larger sample sizes from dominating the outcome. The posttest means and standard deviations for linguistic skill measures (receptive vocabulary, expressive vocabulary, story comprehension, and syntax) were computed. When a study presented two parallel comparisons with one control group and all groups met the inclusion criteria, the study was split and the sample size was adapted without adjusting the outcome values. For example, Hargrave & Sénéchal (2000) were interested in the effects of dialogic storybook reading versus just storybook reading, so the authors included two experimental groups and one control group. Thus, the sample size of the control group was split and included all the children who were in the dialogic reading group.

Overall effect sizes and 95% confidence intervals (CIs) around the point estimates were based on random effects models due to this conservative approach in dealing with heterogeneity (Ioannidis, Patsopoulos, & Evangelou, 2007). In this model, it is assumed that the variability that is based on random differences is above and beyond subject-level sampling error, which are not capable of being identified (Lipsey & Wilson, 2001). Thus, another random component is included in addition to subject-level sampling error, which has resulted in a wider CI. To analyze the moderator variables, the random effects model was used.

The studies were quantified using the Comprehensive Meta-Analysis program (Version 2.2; Borenstein, Hedges, Higgins, & Rothstein, 2005). Per study, effect sizes were first computed for each storybook reading intervention study individually. The effect sizes for the studies involving a parent and/or teacher training to provide an explicit storybook reading intervention were combined to estimate a composite effect size for explicit storybook reading.

### ***Interpretation***

Cohen's criteria will be used to interpret the ES based on the standardized mean differences are: small=0.20, medium=0.50, and large=0.80. The correlation coefficient to interpret the effect size based on Cohen's (1988) criteria are: small=0.10, medium=0.30, large=0.50. For example, if a correlation coefficient resulted in a value of 0.27, then the correlation amongst the various studies analyzed would indicate there to be a moderate correlation between the effect sizes of the study results, but this is to be considered within the context of the intervention sample size and other important variables.



## Results

The final group of intervention studies targeting storybook reading as an intervention comprised of 14 studies. Ten studies tested at least one print-related skill next to an oral language outcome. Overall, 1535 children ( $N_{\text{experimental group}} = 447$ ;  $N_{\text{control group}} = 416$ ) were studied. Storybook reading, in general, had an ES of 1.52, which indicates its significance as an intervention (CI=1.37,1.675) overall. In general, based on the results from the meta-analysis, shared storybook reading as an intervention did further a child's attainment of literacy skills, but primarily oral expression and oral vocabulary. These findings are aligned with previous studies that have found relations between shared storybook reading and these two specific variables in early literacy development. Because storybook reading is a dialogic activity between a parent or teacher and a child, there is an expected relation between this activity and a child's improved oral expression. Storybooks are oftentimes replete with cultural undertones and meanings, which are oftentimes amplified during the verbal interaction between the parent or teacher and the child. These types of interactions provide opportunities for the child to expand their oral expressions skills alongside their expanding vocabulary.

To address the first research question: Does a storybook intervention with a teacher and/or parent training component as part of the book reading provide an additive benefit in improving children's language and print-related skills? When compared to having no literacy exposure in the home, the storybook shared experience with the guardians was additive in furthering a child's literacy skill development, but not necessarily predictive of the skills necessary for furthering a child's reading ability. The

additional effects of interactive reading (i.e., parent training) on linguistic skill development was examined. When parent training was added to the storybook reading intervention, it had an ES of 1.54. Storybook reading without parent training had an ES of 0.437, which indicates a small effect size according to Cohen (1988). This increased effect size when adding a parent training component shows the improved effects of a training component to shared storybook reading. Receiving explicit instruction has been shown to have larger differences in responsiveness to evidence-based reading intervention as shown in past literature (e.g., Denton, Fletcher, Anthony, & Francis, 2006; O'Shaughnessy & Swanson, 2000; Torgesen et al., 2001) This additional factor of parents or teachers providing explicit instruction during storybook reading has been shown to have a larger effect size than storybook reading alone. The explicit instruction of pointing to letters and connecting words with print has been shown to be an effective instructional strategy that has heightened the effectiveness of shared storybook reading in relation to early literacy skill development. To target specific reading skills such as phonological awareness, other explicit targeted instruction would have to be integrated such as directing a child's attention to the letter-sound connections.

To answer the second research question: Is an explicit storybook intervention with a teacher and/or parent training component more strongly related to outcome measures in samples of lower socioeconomic status than in middle-class or mixed samples? The results from the study showed that explicit storybook reading as an intervention had an ES of 0.749, which is larger than that found for families that reported having a middle to higher SES (ES = 0.393). This difference in ES could be attributed to the baseline level of

literacy amongst the two groups. Research has shown that children from lower SES, in general, have lower levels of literacy exposure and rates of literacy skill attainment than children from middle to higher SES families. Thus, if the children from lower SES family environments were starting at a lower baseline in literacy skills, their improvement would be notably higher than children who have a relatively more expansive knowledge base of literacy from the start.

An additional question that this study addressed was whether the strength of the association between reading and linguistic development was related to the first language of the child. In other words, is a child's baseline home literacy environment strongly predictive of outcome measures in literacy and general reading skill growth? The results from the meta-analysis showed that if a child's home language is other than English, the explicit storybook reading intervention will have a notable effect on their future literacy skill attainment ( $p < 0.5$ ). Children who had reported English as the primary home language still showed a statistically significant effect when provided an explicit storybook reading intervention, but there was a slightly stronger effect for children who had a home language other than English. This difference could be attributed to the starting point of the children who had limited exposure to literacy activities in the child's academic target language of English as referenced earlier.

## **Discussion**

The results from this meta-analysis are not surprising, especially considering the research that has been previously conducted on shared storybook reading as an effective

home literacy intervention to increase early literacy skills. During this developmental period, children have a tendency to focus primarily on pictures and aspects of the topographic elements of the story that are not relevant to the actual literacy parts of the book such as the letters, word construction, or text comprehension. As indicated before, research has shown that parents who do not direct their child's attention to the printed text to teach their children the letter names, sounds, numbers, colors, or word similarities are missing a critical element of enriched high-quality storybook reading. Shared storybook reading supports oral language and non-language developments, but being read to is not enough (Meyer et al., 1992). The stronger effect sizes of shared storybook reading after some form of explicit instruction underscores the importance of directed and intentional teaching during this parent-child literacy activity.

There were a variety of specific targeted types of instruction utilized for each study in relation to shared storybook reading. Collins et al. (2005) examined a targeted intervention on vocabulary words during shared storybook reading, whereas Justice (2002) used a print-focus intervention involving the instructor using one of the three prompts that draw the child's attention to a specific aspect of the print such as concepts of words or alphabet knowledge. All of the studies had employed some specific targeted intervention during the shared storybook reading, which this study has found to result in a larger effect than shared storybook reading alone without any explicit instruction.

Engaging children with the explicit purpose of expanding their knowledge is essential for their cognitive, literacy, and numeracy development (Norris & Anderson, 2008). Passively exposing children through increased frequency of opportunities to play

with objects that incidentally have letters and shapes, will not enhance a child's development of alphabetic and numeric concepts. Thus, the results from this meta-analysis provide additional support for the implementation of targeted interventions, even during a simple early literacy activity such as storybook reading.

### **Limitations**

This meta-analysis was intended to be a comprehensive synthesis of currently available studies on shared storybook reading with an additional component of targeted explicit instruction in order to determine any additional benefits of this variable. Because the studies available to be used in this study were limited (N=14), the generalizability of the findings should be interpreted with caution. The targeted interventions that each study used were diverse and broad, thus creating an additional limitation as to what specific targeted early literacy skill can really be developed through an explicit instructional training for the parent or teacher. These preliminary findings may provide some insight into guiding future areas of research that are in need. Primarily, because the correlations between shared storybook reading and improved oral expression and vocabulary have been well documented, targeted interventions that focus on vocabulary improvement may be an area that is well deserving of increased attention. In addition, increased studies targeting language minority children would be another area that would benefit from additional research. Despite the sizeable impact that storybook reading has been found to have on future literacy development and acquisition, a large majority of these studies have been conducted on monolinguals. Because the home languages of language minority

children could have an additive effect on the child's early literacy skills in an L2, providing more insight into how shared storybook reading interventions using storybooks in the child's home language could be an area worth examining in the near future.

### **Practical Implications**

These results can have practical implications for the type of literacy activities in the home or at school, specifically the quality of parent or teacher interactions with the child during shared storybook reading periods prior to children beginning or at the early stages of academic exposure. Considering the time and resource constraints facing many of today's parents, providing this information that is focused on the quality of storybook reading rather than the quantity could have notable positive effects for children who are may be identified as being at higher risk (e.g., lower SES, different home language) of not attaining the prerequisite pre-literacy skills necessary for success in the school environment. The results from this meta-analysis could have particular benefits for recent federally funded programs such as Early Reading First, a Title I program funded through Even Start (ESEA, 2003). Programs like Early Reading Start can use this information to further enrich the quality of their programs in providing higher quality early education to better prepare young children for kindergarten with the necessary language and early reading skills.

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Table 1.1 – Description of Studies Included in the Meta-Analysis

Author	Journal	Year	N	Age	Dependent Variable	CI	ES (g)
Aram et al.	Early Childhood Research	2004	71	46.05	Lettknow;PA; Wr_Rec	(-0.169, 0.701)	0.45
Aram et al.	Merrill-Palmer Quarterly	2002	41	69.59	PA; Wr_Rec	(0.131, 1.136)	0.47
Brannon et al.	American Creative Education	2013	26	57.6	Exp_Lang	(-0.349, 1.206)	0.43
Collins	Early Childhood Research Quarterly	2010	80	55.08	Vocab	(0.890, 1.938)	1.39
Coyne et al.	Exceptionality	2004	64	62.52	Vocab	(0.524, 1.571)	0.68
Hargrave et al.	Early Childhood Research Quarterly	2000	36	49.2	Vocab	(-0.304, 1.033)	0.21
Jordan et al.	Reading Research Quarterly	2000	248	74.4	Vocab; Story_Comp	(0.557, 1.233)	0.51
Justice et al.	American Journal of Speech-Language Pathology	2002	30	53	Lettknow; Wr_Rec; Exp_Lang	(0.543, .125)	1.20
Justice et al.	Language, Speech, and Hearing Services in Schools	2009	106	52.8	Lettknow; Wr_Rec	(0.269, 1.075)	0.50
Leslie et al.	Reading Research Quarterly	1999	41	72.3	Wr_Rec	(-0.177, 0.693)	0.47
Piasia et al.	Child Development	2012	550	52.84	Vocab	(-0.163, 0.187)	0.03
Roberts	Reading Research Quarterly	2008	33	52.13	Vocab	(-0.254, 1.159)	0.69
Senechal et al.	Reading Research Quarterly	1998	168	60	Exp_Lang; Vocab	(-0.172, 0.433)	0.06
Waskik et al.	Journal of Educational Psychology	2001	127	51.6	Vocab	(0.835, 1.593)	1.52

Notes: Design: RCT = randomized control trial; Lettknow=letter knowledge; PA=phonological awareness; Wr\_Rec=word writing and recognition; Exp\_Lang=expressive language; Vocab=vocabulary; Story Comp=story comprehension; ParentUse=parents' use of the targeted interaction strategy.

Table 1.2 – Comparisons Related to Moderator Variables

Moderator	N	p	CI	ES (g)
SES				
<i>Low</i>	1268	0.000	0.360-1.138	0.749
<i>Middle</i>	273	0.039	0.020-0.765	0.393
Home Language				
<i>Other</i>	166	0.000	0.356-1.087	0.721
<i>English</i>	1375	0.012	0.084-0.684	0.384
Age				
≤	4	0.000	0.307-0.948	0.531
>	5	0.052	-0.005-1.067	0.628
Parent Support				
<i>Yes</i>	281	0.000	0.343-0.880	0.621
<i>No</i>	1260	0.000	0.369-0.874	0.612