

Relationship Between Child Participation in Everyday Activities and Early Literacy and Language Development

Carl J. Dunst
Andrea Valentine
Melinda Raab
Deborah W. Hamby

Findings from a research synthesis of studies investigating the relationships between infant, toddler, and preschool participation in everyday family and community activities and early literacy and language development are reported. Thirty studies including 6,703 children with and without disabilities or delays were the focus of analysis. Results showed that frequency of child participation in everyday home/family and community activities was associated with better child language and literacy outcomes. Implications for practice are described.

The home and community environments of young children are now recognized as important sources of learning opportunities for acquiring literacy and language abilities (Huebner, 2000; Stainthorp & Hughes, 2000; Wood, 2002). Everyday family and community life is made up of hundreds of different kinds of routines, experiences, and activities that provide infants, toddlers, and preschoolers informal but nonetheless rich and varied opportunities to acquire functional behavior (Alvarez, 1994; Dunst, Hamby, Trivette, Raab, & Bruder, 2000; Gauvain, 1999). Weigel, Martin, and Bennett (2010) found that the “more regular the routines in a [child’s] household, the more likely parents were to engage their children in literacy enhancing activities, and in turn, the higher the children’s print knowledge and reading interest” (p. 5).

The purpose of the research synthesis described in this *CELLreview* was to identify which family and community activities were associated with which types of early literacy and language abilities. The focus of analysis was the extent to which variations in child participation in different everyday family and community activities was associated with variations in different child literacy and language abilities. The expected outcome was a better understanding of the nature of the relationships between child participation in everyday activity settings and child literacy and language development.

Search Strategy

Studies were located using *activity* OR *activities* OR *routine* OR *routines* (and more than 50 specific activity set-

ting terms) AND *child language* OR *verbal communication* OR *speech development* OR *verbal ability* OR *oral comprehension* OR *expressive language* OR *receptive language* OR *phonolog* aware** OR *print knowledge** OR *rhyme** or *rhyme detect** OR *rhyme product** OR *letter knowledge** OR *print knowledge** OR *phoneme blend** OR *phoneme delet** OR *reading* OR *emerg* reading* (and more than 25 other literacy and language terms) AND *infant** OR *infancy* OR *toddler* OR *preschool** OR *kindergarten* as search terms. PsychInfo, ERIC, MEDLINE, Education Research Complete, and Academic Search Premier were searched for studies. These were supplemented by Google Scholar, Scirus, Ingenta Connect, and Google searches as well as a search of an EndNote library maintained by our Institute. Hand searches of the reference sections of all retrieved journal articles, book chapters, books, dissertations, conference presentations, and unpublished papers were examined to locate additional studies. Studies were included if the majority of children in a study were six years of age or younger and the correlations between the activity setting measures and the children’s language or literacy

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development were reported by the investigators or could be computed from information in the research reports.

Search Results

Thirty studies were located that included 6,703 children with and without disabilities or delays. Appendix A includes selected characteristics of the children. The studies were conducted in the United States (N = 17), Canada (N = 5), Finland (N = 3), and one each in four other countries (United Kingdom, Australia, India, the Netherlands).

The average age of the children was 44 months (Range = 18 to 63). There were an equal number of male and female participants in the studies for which investigators reported child gender. Most of the studies included children without disabilities or delays (N = 19), whereas eight studies were investigations of children considered at-risk for poor outcomes for family socioeconomic factors and three studies included children with identified disabilities.

The particular types of family and community activities that were the focus of investigation are shown in Appendix B. Home or family activities were the focus of investigation in 22 studies, and community activities were the focus of investigation in eight studies. The large majority of studies were investigations of the relationships between frequency of child participation in everyday activities and the study outcomes.

The particular family activities that were investigated included shared reading, rhyming activities, alphabet and word games, parent-child play, family mealtimes, television watching, and alphabet and writing activities. The community activities that were the focus of investigation included library or bookstore visits, family vacations or celebrations, religious or cultural activities, and weekend outings and routines.

The outcomes that were the focus of investigation included either or both literacy and language measures. The literacy-related outcomes included phonological awareness; rhyme production, detection, or knowledge; phoneme awareness and detection; and reading ability. The language-

related outcomes included expressive language, verbal ability, and receptive language (including oral comprehension). The outcome measures included both activity-specific *in vivo* observations or assessments of child literacy or language behavior and a variety of different standardized measures (e.g., Bayley, 1993; Dunn & Dunn, 2007; Fenson et al., 1993; Wagner, Torgesen, & Rashotte, 1999; Woodcock & Johnson, 1989/1990; Zimmerman, Steiner, & Pond, 2002).

The weighted average correlation coefficients between child participation in the everyday activities and the study outcomes were used as the sizes of effect for the relationships between the activity setting measures and the language and literacy outcomes. Appendix C lists the everyday activities, literacy and language outcomes, and effect sizes for the relationships between the measures. The 95% confidence intervals for the average effect sizes were used for substantive interpretation of the relationships among measures. The *Z*-test was used to estimate the strength of the relationships between the activity setting measures and the children's literacy and language development.

Synthesis Findings

Table 1 shows the weighted average correlations between the frequency of child participation in the home/family and community activities and the literacy and language outcomes. There were statistically significant relationships between child participation in the everyday family and community activity measures and both the language and literacy outcomes. In all cases, more frequent participation in the everyday activities was associated with more positive child outcomes.

The different family and community activities were grouped into four categories to determine if particular types of activities were differentially related to the child outcomes. The findings are shown in Table 2. Participation in all of the different activities was associated with better child literacy and language outcomes. The particular everyday activities within categories that were associated with the most positive child outcomes were library or bookstore visits, $r = .25$, (95%

Table 1
Average Effect Sizes and 95% Confidence Intervals (CI) for the Relationships Between Child Participation in Everyday Activity Settings and the Child Language and Literacy Outcomes

Settings/Outcomes	Number		Mean Effect Size	95% CI	<i>Z</i> -test	<i>p</i> -value
	Studies	Effect Sizes				
<i>Home/Family Settings</i>						
Language Outcomes	21	78	.19	.17-.21	23.01	.0000
Literacy Outcomes	15	101	.20	.18-.21	26.02	.0000
<i>Community Settings</i>						
Language Outcomes	6	10	.20	.15-.26	7.37	.0000
Literacy Outcomes	4	13	.10	.04-.17	3.18	.0015

Table 2

Average Effect Sizes and 95% Confidence Intervals (CI) for the Relationships Between Child Participation in Different Types of Everyday Activities and the Child Outcome Measures

Everyday Activities	Number		Mean Effect Size	95% CI	Z-test	p-value
	Studies	Effect Sizes				
<i>Parent-Child Reading</i>	25	114	.22	.21-.24	30.38	.0000
<i>Family Outings</i>	7	23	.16	.12-.20	7.70	.0000
<i>Literacy Activities</i>	7	38	.16	.14-.17	17.09	.0000
<i>Family Routines</i>	5	27	.12	.08-.17	5.85	.0000

CI = .20-.30), $Z = 9.51$, $p = .0000$, shared reading, $r = .22$, (95% CI = .21-.24), $Z = 29.45$, $p = .0000$, and alphabet and writing activities, $r = .15$, (95% CI = .12 - .17), $Z = 12.94$, $p = .0000$, and parent and joint educational television, $r = .12$, (95% CI = .08-.16), $Z = 5.46$, $p = .0000$.

Table 3 shows the results for the relationships between child participation in everyday activities and different language and literacy outcomes. Child participation in everyday activities was statistically associated with better child outcomes for all the language and literacy measures. The particular outcomes that were most strongly associated with the everyday activity measures were letter and word knowledge, $r = .26$, (95% CI = .24-.28), $Z = 24.15$, $p = .0000$, rhyming, $r = .26$, (95% CI = .19-.32), $Z = 7.52$, $p = .0000$, verbal expression, $r = .25$, (95% CI = .22-.28), $Z = 18.59$, $p = .0000$, and language comprehension, $r = .20$, (95% CI = .17-.22), $Z = 13.68$, $p = .0000$.

Whether or not the relationships between child participation in everyday home/family and community activities and the literacy and language child outcomes were moderated by a study or participant variable is shown in Table 4. The sizes of effects were almost identical for all the moderator variables except for type of child outcome measure. This was not unexpected since one of the most common findings in many *CELLreviews* is that the sizes of effects for the re-

lationships between any intervention variable and the study outcomes are larger for outcomes obtained in the context of the intervention afforded young children. Overall, however, the results from the moderator analyses indicated that most of the variables had little or no effect on the relationships between child participation in the everyday activities and the study outcomes.

Discussion

Child participation in literacy-rich everyday family and community activities is one component of the *Center for Early Literacy Learning (CELL)* intervention model (Dunst, Trivette, Masiello, Roper, & Robyak, 2006) and is viewed as a condition for parents and practitioners to be able to use naturalistic instructional practices (Dunst, Raab, & Trivette, 2011; Raab & Dunst, 2009) to support and encourage child literacy and language development while engaged in the activities. Results reported in this *CELLreview* indicated that child participation in many different types of everyday family and community activities was associated with discernible differences in the child outcomes constituting the focus of investigation.

Findings described in this *CELLreview* are best understood by considering the fact that the particular activities that were the focus of investigation in the primary studies

Table 3

Average Effect Sizes and 95% Confidence Intervals (CI) for the Relationships Between Child Participation in Everyday Activities and Different Child Language and Literacy Outcomes

Child Outcomes	Number		Mean Effect Size	95% CI	Z-test	p-value
	Studies	Effect Sizes				
<i>Language Outcomes</i>						
Expressive	17	45	.18	.16-.20	19.92	.0000
Receptive	18	43	.20	.17-.22	13.68	.0000
<i>Literacy Outcomes</i>						
Phonological Awareness	10	44	.14	.12-.17	12.14	.0000
Print-Related Abilities	14	70	.22	.21-.24	23.65	.0000

Table 4

Moderators of the Relationships Between Child Participation in Everyday Activities and the Child Language and Literacy Outcomes

Moderators	Number		Mean Effect Size	95% CI	Z-test	p-value
	Studies	Effect Sizes				
<i>Country</i>						
United States	17	104	.17	.16-.19	18.54	.0000
Other	13	98	.20	.18-.21	30.37	.0000
<i>Peer Reviewed</i>						
Yes	28	196	.19	.18-.20	35.15	.0000
No	2	6	.24	.15-.33	5.22	.0000
<i>Year of Publication</i>						
1981-1999	11	88	.19	.17-.21	16.32	.0000
2000-2007	19	114	.19	.18-.20	31.56	.0000
<i>Study Sample Size</i>						
24-48	10	63	.21	.17-.25	10.81	.0000
49-117	10	88	.20	.18-.23	18.75	.0000
118+	10	51	.18	.17-.20	28.26	.0000
<i>Child Age (months)</i>						
14-42	10	63	.21	.19-.23	18.86	.0000
43-54	11	71	.19	.17-.22	16.65	.0000
55-66	8	66	.18	.17-.20	25.03	.0000
<i>Child Condition</i>						
No Delay	19	130	.19	.18-.20	29.89	.0000
Delay/At-Risk	11	72	.19	.17-.21	19.22	.0000
<i>Type of Outcome Measure</i>						
Standardized	23	84	.15	.13-.17	17.05	.0000
<i>In Vivo</i>	21	118	.21	.20-.23	31.75	.0000

are ones that were examined in other *CELL* research syntheses where the particular characteristics of the child and adult experiences while engaged in the activities were important factors associated with positive child outcomes (e.g., Dunst, Jones, Johnson, Raab, & Hamby, 2011; Dunst, Meter, & Hamby, 2011; Dunst, Trivette, Williams, Simkus, & Hamby, 2012; Trivette, Dunst, & Gorman, 2010). Therefore, everyday activities that provide young children literacy rich experiences are the settings in which parents and practitioners can provide young children learning opportunities that promote and enhance literacy and language development.

Implications for Practice

The types of everyday activities that are especially suited as contexts and settings for child literacy and language learning are the focus of 20 *CELL* literacy learning opportunities prac-

tice guides (www.earlyliteracylearning.org/products1.php). These practice guides are described as *Literacy Rich Experiences* as part of the compilation of both the parent and practitioner practice guides. The practice guides include ideas for engaging infants, toddlers, and preschoolers in interest-based everyday activities and also include suggestions and guidelines for what parents and practitioners can do to encourage child literacy and language learning while children are engaged in the literacy rich experiences. The interested reader is referred to Hall (2000), Nwokah and Gulker (2006), Stockall and Dennis (2012), and Webster and Feiler (1998) for additional ideas for how to use everyday activities as sources of child literacy and language learning opportunities.

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Authors

Carl J. Dunst, Ph.D., is Co-Principal Investigator of the Center for Early Literacy Learning and Co-Director and Research Scientist at the Orelena Hawks Puckett Institute in Asheville and Morganton, North Carolina. Andrea Valentine, M.Ed., is an Early Interventionist and Research Assistant at the Puckett Institute. Melinda Raab, Ph.D., is an Associate Research Scientist, and Deborah W. Hamby, M.P.H., is a Research Analyst, both at the Puckett Institute.

Appendix A

Selected Characteristics of Child Study Participants

Study	Number	Child's Age		Child's Gender		Country	Condition
		Mean	Range	Male	Female		
Burgess (1997), Burgess (2002)	97	61	48-70	NR	NR	United States	NR
Byrne et al. (2006) Samuelsson et al. (2005)	1254	59	47-71	574	680	U.S., Australia, Norway, Sweden	Typically developing
Collins (2010)	80	54	48-64	42	38	United States	At-risk
Crain-Thoreson & Dale (1992)	25	24	NR	9	16	United States	Typically developing
Davidse et al. (2011)	174	54	51-57	NR	NR	Netherlands	NR
Dunn (1981)	40	63	57-69	25	15	United States	NR
Dunst et al. (2001)	63	38	1-72	19	44	United States	Disability or delay
Dunst et al. (2000) Dunst et al. (2002)	1603	42	0-72	NR	NR	United States (Puerto Rico and Micronesia)	Disability or at-risk
Ezell (2000)	48	48	NR	23	25	United States	At-risk
Fernandez-Fein & Baker (1997)	59	58 ^a	NR	32	27	United States	Mixed
Forget-Dubois et al. (2009)	693	19	NR	NR	NR	Canada	NR
Foster et al. (2005)	325	59	42-76	164	161	United States	At-risk
Kalia (2007)	24	44	40-49	NR	NR	India	NR
Kelman (2007)	91	54	36-72	39	52	United States	Typically developing
Levy et al. (2006) Sample 1	150	NR	48-59	75	75	Canada	Typically developing
Levy et al. (2006) Sample 2	166	NR	60-71	83	83	Canada	Typically developing
Lyytinen et al. (1998)	108	24	NR	62	46	Finland	Typically developing
Mason (1980)	38	48	42-54	NR	NR	United States	Typically developing
Payne et al. (1994)	236	54	45-66	130	106	United States	At-risk
Richman & Colombo (2007)	45	NR	10-17	NR	NR	United States	NR
Roberts et al. (2005)	66	18	NR	NR	NR	United States	At-risk
Rush (1999)	39	59	52-66	19	20	United States	At-risk
Senechal et al. (1996) Study1	117	52	40-69	63	54	Canada	Typically developing
Senechal et al. (1996) Study 2	47	49	33-70	31	16	Canada	Typically developing
Share et al. (1983)	543	61	49-83	NR	NR	Australia	NR
Tomopoulos et al. (2006)	44	18	NR	28	16	United States	At-risk
Torppa et al. (2007) Sample 1	96	24	NR	46	50	Finland	At-risk
Torppa et al. (2007) Sample 2	90	24	NR	50	40	Finland	Typically developing
Vandewater & Bickman (2004)	310	48	24-60	177	133	United States	NR
Wells et al. (1984)	32	NR	NR	16	16	United Kingdom	Typically developing

Appendix B

Selected Characteristics of the Everyday Activities That Were the Focus of Investigation

Study	Activity Description	Activity Measure	Assessment Procedure	Type	Context
Burgess (1997) Burgess (2002)	Shared reading	Duration	Parent survey	Social	Home
		Frequency	Parent survey	Social	Home
Byrne et al. (2006), Samuelsson et al. (2005)	Shared reading	Frequency	Parent survey	Social	Home
	Alphabet/reading activities	Frequency	Parent survey	Social/Non-social	Home
Collins (2010)	Shared reading	Frequency	Parent survey	Social	Home
Crain-Thorenson & Dale (1992)	Shared reading	Frequency	Parent survey	Social	Home
Davidse et al. (2011)	Shared reading	Frequency	Parent survey	Social	Home
Dunn (1981)	Shared reading	Frequency	Parent log	Social	Home
	Educational TV	Frequency	Parent log	Non-Social	Home
Dunst et al. (2001)	Verbal play	Frequency of participation	Parent survey	Social	Home
Dunst et al. (2000), (2002)	Literacy activities	Frequency of participation	Parent log	Social/Non-social	Home
Ezell (2000)	Shared reading	Frequency	Parent survey	Social	Home
Fernandez-Fein & Baker (1997)	Word games	Frequency	Parent survey	Social	Home
	Hand clap games	Frequency	Parent survey	Social	Home
	Singing	Frequency	Parent survey	Social/Non-social	Home
	Engagement with books	Frequency	Parent survey	Non-social	Home
Forget-Dubois et al. (2009)	Shared and individual reading	Frequency	Parent interview	Social/Non-social	Home
Foster et al. (2005)	Shared reading	Frequency	Parent interview	Social	Home
	Community outings	Number of activities	Parent interview	Social	Community
	Home learning activities	Number of activities	Parent interview	Social	Home
Kalia (2007)	Library visits	Frequency	Parent survey	Social	Community
Kelman (2007)	Library or bookstore visits	Frequency	Parent survey	Social	Community
Levy et al. (2005) Sample 1 and 2	Child-directed reading and writing	Frequency	Parent survey	Non-social	Home
	Alphabet and book activities	Frequency	Parent survey	Social/Non-social	Home
	Rhyming/ ABC activities	Frequency	Parent survey	Social	Home
	Shared reading	Frequency	Parent survey	Social	Home
Lyytinen et al. (1998)	Shared reading (father)	Frequency	Parent survey	Social	Home
	Shared reading (mother)	Frequency	Parent survey	Social	Home
Mason (1980)	Shared Reading	Duration	Parent survey	Social	Home
	Listens to story records	Frequency	Parent survey	Non-social	Home
	Goes on outings with parents	Frequency	Parent survey	Social	Community
	Library visits	Frequency	Parent survey	Social	Community
	Total TV watching time	Hours per day	Parent survey	Non-social	Home
	Watches Sesame St.	Frequency	Parent survey	Non-social	Home
	Watches Electric Co.	Frequency	Parent survey	Non-social	Home
	Watches Saturday cartoons	Frequency	Parent survey	Non-social	Home
	Discusses TV with parents	Frequency	Parent survey	Social	Home

Appendix B, continued.

Study	Activity Description	Activity Measure	Assessment Procedure	Type	Context
Payne et al. (1994)	Shared reading	Duration	Parent survey	Social	Home
		Frequency	Parent survey	Social	Home
	Library visits	Frequency	Parent survey	Social	Community
Richman& Colombo (2007)	Shared reading	Frequency	Parent survey	Social	Home
Roberts et al. (2005)	Shared reading	Frequency	Parent interview	Social	Home
Rush (1999)	Meal	Frequency (percent of intervals)	Observation	Social	Home
	Shared reading	Frequency (percent of intervals)	Observation	Social	Home
Senechal et al. (1996) Study1	Shared reading	Frequency	Parent survey	Social	Home
	Looking at books alone	Frequency	Parent survey	Non-social	Home
	Library visits	Frequency	Parent survey	Social	Community
Senechal et al. (1996) Study 2	Shared reading	Frequency	Parent survey	Social	Home
	Library visits	Frequency	Parent survey	Social	Community
Share et al.(1983)	Shared reading	Frequency	Parent survey	Social	Home
Tomopoulos (2006)	Shared reading	Frequency	Parent interview	Social	Home
Torppa et al. (2007) Sample1	Shared reading	Frequency and duration	Parent survey	Social	Home
Torppa et al. (2007) Sample2	Shared reading	Frequency and duration composite	Parent survey	Social	Home
Vandewater & Bickman (2004)	Educational television viewing	Amount of time per week	Parent diaries	Non-social	Home
	Television viewing total	Amount of time per week	Parent diaries	Non-social	Home
Wells et al. (1984)	Shared reading	Frequency	Parent interview	Social	Home

Appendix C

Correlation Effect Sizes for the Relationship Between the Everyday Activity Setting Measures and the Child Literacy and Language Outcomes

Study	Everyday Activities		Outcome Measures		Effect Size (<i>r</i>)
	Activity	Age (months)	Outcome Measure	Age (months)	
Burgess (1997), Burgess (2002)	Shared reading (frequency)	61	Phonological awareness	61	0.16
		61	Receptive language	61	0.27
		61	Expressive Language	61	0.23
	Shared reading (duration)	61	Phonological awareness	61	0.03
		61	Receptive language	61	0.05
		61	Expressive language	61	0.10
Byrne et al. (2006), Samuelsson et al. (2005)	Alphabet/reading activities	59	Verbal ability	59	0.16
		59	Phonological awareness	59	0.15
		59	Verbal fluency	59	-0.15
		59	Print knowledge	59	0.32
	Shared reading	59	Verbal ability	59	0.31
		59	Phonological awareness	59	0.23
		59	Verbal fluency	59	0.09
		59	Print knowledge	59	0.44
Collins (2010)	Shared reading	54	Vocabulary comprehension	54	0.56
		54	Receptive language	54	0.31
		54	Expressive language	54	0.36
Crain-Thoreson & Dale (1992)	Shared reading	24	Receptive language	24	0.09
		24	Mean length utterance	24	0.10
Davidse (2011)	Shared reading	54	Receptive vocabulary	54	0.06
		54	Letter knowledge	54	0.20
Dunn (1981)	Shared reading	63	Verbal ability	63	0.26
		63	Oral comprehension	63	0.11
		63	Verbal ability	63	-0.15
		63	Receptive language	63	0.26
	Educational TV	63	Verbal ability	63	0.20
		63	Oral comprehension	63	0.38
		63	Verbal ability	63	0.14
		63	Receptive language	63	0.37
Dunst (2001)	Verbal play	38	Expressive Language	42	0.34
Dunst (2000); (2002)	Literacy activities	42	Expressive Language	42	0.23
Ezell (2000)	Shared reading	48	Print knowledge	48	0.25
Fernandez-Fein & Baker (1997)	Word games	58	Rhyme detection	58	0.39
		58	Rhyme production	58	0.47
		58	Alliteration detection	58	0.16
		58	Nursery rhyme knowledge	58	0.32
	Hand-clap games	58	Rhyme detection	58	-0.15
		58	Rhyme production	58	-0.08

Appendix C, continued.

Study	Everyday Activities		Outcome Measures		Effect Size (<i>r</i>)
	Activity	Age (months)	Outcome Measure	Age (months)	
Fernandez-Fein & Baker (1997)	Hand-clap games	58	Alliteration detection	58	-0.13
		58	Nursery rhyme knowledge	58	0.12
Fernandez-Fein & Baker (1997) continued	Singing	58	Rhyme detection	58	0.02
		58	Rhyme production	58	-0.01
		58	Alliteration detection	58	-0.09
		58	Nursery rhyme knowledge	58	0.27
	Engagement with books	58	Rhyme detection	58	0.44
		58	Rhyme production	58	0.45
		58	Alliteration detection	58	0.11
		58	Nursery rhyme knowledge	58	0.38
Forget-Dubois et al. (2009)	Shared reading	19	Expressive language	32	0.25
Foster et al. (2005)	Shared reading	59	Phoneme deletion/rhyming	59	0.06
		59	Receptive language	59	0.12
	Home learning activities	59	Phoneme deletion/rhyming	59	0.01
		59	Receptive language	59	-0.01
	Community outings	59	Phoneme deletion/rhyming	59	0.11
		59	Receptive language	59	0.02
Kalia (2007)	Library visits	44	Receptive language	44	0.19
		44	Print concepts	44	0.05
		44	Blending	44	0.13
		44	Elision	44	0.24
		44	Complex syntax	44	0.43
		44	Narrative complexity	44	0.17
Kelman (2007)	Library or bookstore visits	54	Phonological awareness	54	0.16
		54	Alphabetic knowledge	54	0.27
		54	Receptive language	54	0.23
		54	Print concepts	54	0.22
Levy et al. (2005) Sample 1	Child directed reading and writing	54	Word shape knowledge	54	0.21
			Word element knowledge	54	0.13
		54	Letter/word knowledge	54	0.45
	Alphabet and book activities	54	Word shape knowledge	54	0.33
		54	Word element knowledge	54	0.23
		54	Letter/word knowledge	54	0.05
	Rhyming/ABC activities	54	Word shape knowledge	54	0.23
		54	Word element knowledge	54	0.09
	Educational games and books	54	Word shape knowledge	54	-0.02
		54	Word element knowledge	54	0.04
	Shared reading	54	Word shape knowledge	54	0.04
		54	Word element knowledge	54	0.21
54		Letter/word knowledge	54	-0.01	

Appendix C, continued.

Study	Everyday Activities		Outcome Measures		Effect Size (<i>r</i>)	
	Activity	Age (months)	Outcome Measure	Age (months)		
Levy et al. (2005) Sample 2	Child-directed reading and writing	66	Phonological sensitivity	66	0.29	
		66	Letter/word knowledge	66	0.41	
	Alphabet and book activities	66	Phonological sensitivity	66	0.01	
		66	Letter/word knowledge	66	0.12	
	Rhyming activities	66	Phonological sensitivity	66	0.24	
		66	Letter/word knowledge	66	0.16	
	Educational games and books	66	Phonological sensitivity	66	-0.07	
		66	Letter/word knowledge	66	0.06	
	Shared reading	66	Phonological sensitivity	66	0.15	
		66	Letter/word knowledge	66	0.17	
	Lyytinen et al. (1998)	Shared reading (father)	24	Expressive language	24	0.13
			24	Vocabulary production	24	0.20
24			Use of suffixes	24	0.15	
24			Max sentence length	24	0.17	
Shared reading (mother)		24	Expressive language	24	0.19	
		24	Vocabulary production	24	0.28	
		24	Use of suffixes	24	0.22	
		24	Max sentence length	24	0.23	
Mason (1980)	Shared reading	48	Print knowledge	48	0.07	
		48	Word reading level	56	0.11	
		56	Word reading level	56	0.02	
	Listens to story records	48	Print knowledge	48	0.32	
		48	Word reading level	56	0.07	
		56	Word reading level	56	0.17	
	Outings with parents	48	Print knowledge	48	0.02	
		48	Word reading level	56	0.02	
		56	Word reading level	56	-0.09	
	Library visits	48	Print knowledge	48	0.12	
		48	Word reading level	56	0.12	
		56	Word reading level	56	0.25	
	Total TV watching time	48	Print knowledge	48	0.44	
		48	Word reading level	56	0.29	
		56	Word reading level	56	-0.15	
	Watches <i>Sesame Street</i>	48	Print knowledge	48	0.31	
		48	Word reading level	56	0.36	
		56	Word reading level	56	0.30	
	Watches <i>Electric Company</i>	48	Print knowledge	48	0.07	
		48	Word reading level	56	0.12	
		56	Word reading level	56	0.16	
	Watches Saturday cartoons	48	Print knowledge	48	-0.01	

Appendix C, continued.

Study	Everyday Activities		Outcome Measures		Effect Size (r)
	Activity	Age (months)	Outcome Measure	Age (months)	
Mason (1980)	Watches Saturday cartoons	48	Word reading level	56	-0.25
		56	Word reading level	56	0.05
	Discusses TV with parents	48	Print knowledge	48	0.52
		48	Word reading level	56	0.43
		56	Word reading level	56	0.23
Payne et al. (1994)	Shared reading (Frequency)	54	Receptive language	54	0.23
		54	Expressive language	54	0.27
	Shared reading (Duration)	54	Receptive language	54	0.08
		54	Expressive language	54	0.21
	Library visits	54	Receptive language	54	0.25
		54	Expressive language	54	0.16
Richman & Colombo (2007)	Shared reading	14	Receptive language	17	0.35
		14	Expressive language	17	0.41
Roberts et al. (2005)	Shared reading	30	Receptive language	36	0.10
		30	Receptive language	60	0.21
		30	Receptive language	48	0.18
		30	Receptive language	60	0.13
		30	Expressive language	48	0.25
		30	Expressive language	60	0.24
		30	Print awareness	48	0.16
		30	Print awareness	60	0.15
Rush (1999)	Meal	59	Phoneme blending	59	0.19
		59	Onset recognition	59	-0.03
		59	Letter naming	59	0.09
		59	Expressive language	59	0.26
		59	Receptive language	59	0.26
	Shared reading	59	Phoneme blending	59	0.19
		59	Onset recognition	59	0.28
		59	Letter naming	59	0.07
		59	Expressive language	59	0.19
		59	Receptive language	59	0.07
Senechal et al. (1996) Study 1	Shared reading	52	Receptive language	52	0.24
	Child looking at books alone	52	Receptive language	52	0.15
	Library visits	52	Receptive language	52	0.37
Senechal et al. (1996) Study 2	Shared reading	49	Receptive language	49	0.10
	Library visits	49	Receptive language	49	0.37
	Shared reading	49	Expressive language	49	0.27
	Library visits	49	Expressive language	49	0.48
Share et al. (1983)	Shared reading	61	Early reading achievement	61	0.19
	TV watching	61	Early reading achievement,	61	0.02

Appendix C, continued.

Study	Everyday Activities		Outcome Measures		Effect Size (<i>r</i>)
	Activity	Age (months)	Outcome Measure	Age (months)	
Tomopoulos (2006)	Shared reading	18	Receptive language	21	0.24
Torpa et al. (2007) Sample 1	Shared reading	24	Phonological awareness	54	-0.07
		24	Phonological awareness	66	-0.01
		24	Letter knowledge	54	0.10
		24	Letter knowledge	66	0.04
		24	Expressive language	42	0.34
		24	Expressive language	66	0.30
		24	Receptive language	42	0.30
		24	Receptive language	60	0.35
		48	Phonological awareness	54	0.01
		48	Letter knowledge	54	0.15
		48	Letter knowledge	66	0.09
		48	Expressive language	42	0.37
		48	Expressive language	66	0.41
		48	Receptive language	42	0.37
		48	Receptive language	60	0.29
		60	Phonological awareness	66	0.22
		60	Letter knowledge	66	0.13
		60	Expressive language	66	0.43
		60	Receptive language	60	0.37
		Torppa et al. (2007) Sample 2	Shared reading	24	Phonological awareness
24	Phonological awareness			66	0.04
24	Letter knowledge			54	0.15
24	Letter knowledge			66	0.10
24	Expressive language			42	0.21
24	Expressive language			66	0.12
24	Receptive language			42	0.10
24	Receptive language			60	0.18
48	Phonological awareness			54	0.08
48	Phonological awareness			66	-0.03
48	Letter knowledge			54	0.10
48	Letter knowledge			66	0.10
48	Expressive language			42	0.23
48	Expressive language			66	0.12
48	Receptive language			42	0.09
48	Receptive language			60	0.15
60	Phonological awareness			66	0.10
60	Letter knowledge			66	0.24
60	Expressive language			66	0.30
60	Receptive language			60	0.25

Appendix C, continued.

Study	Everyday Activities		Outcome Measures		Effect Size (<i>r</i>)
	Activity	Age (months)	Outcome Measure	Age (months)	
Vandewater & Bickman (2004)	Educational TV	48	Reading ability	48	0.19
	Television viewing	48	Reading ability	48	-0.10
Wells et al. (1984)	Shared reading	60	Receptive language	60	0.33
		60	Oral Comprehension	60	0.33