

Relationships Between Young Children's Interests and Early Language Learning

Melinda Raab

Carl J. Dunst

Deborah W. Hamby

It is now generally acknowledged that young children's early communication and language development is enhanced when learning opportunities have interest-based features and elements (e.g., Frijters, Barron, & Brunello, 2000; Nelson, 1999; O'Sullivan, 1997; Ortiz, Stowe, & Arnold, 2001; Pruden, Hirsh-Pasek, Golinkoff, & Hennon, 2006). Interest-based child learning is one of four components of an intervention model that has been the focus of investigation by staff at the *Center for Everyday Child Language Learning* (Dunst, Trivette, & Raab, 2013a, 2013b). The model, which is shown in Figure 1, includes interest-based child learning opportunities, everyday family and community activities as contexts for language learning, methods and strategies for increasing child participation in interest-based everyday language learning activities, and the use of caregiver responsive teaching for supporting and strengthening children's communication and language competence in everyday activities. The purposes of the research synthesis described in this paper were to (1) evaluate the relationships between different types of children's interests and early language development and (2) identify the conditions under which child interests were associated with optimal language development. The findings from research syntheses of practices in other components of the model are described in other *CECLL* reports (Dunst, Valentine, Raab, & Hamby, 2013; Raab, Dunst, Johnson, & Hamby, 2013; Trivette, Dunst, Simkus, & Hamby, 2013).

In other research syntheses we have completed on the influences of children's interests on learning and development, we have evaluated the effects of both personal and situational interests on a number of different child behavioral and developmental outcomes (Dunst, Jones, Johnson, Raab, & Hamby, 2011; Raab & Dunst, 2007). *Personal interests* include a child's individual likes, preferences, favorites, strengths, and other individual child factors that encourage and sustain child engagement and participation in desired and appealing activities. *Situational interests* include those aspects of the social and nonsocial environment that attract child attention, curiosity, and engagement in interactions with people and objects. Situational interests are characterized by the *interestingness* of people, events, and things that evoke child engagement. According to

The relationships between different types of child interests and children's early communication and language development were examined in 41 studies including more than 4000 children with and without disabilities or delays. Results showed that the sizes of effect between two types of interests (personal and situational) were largest when interests were incorporated into activities that were contexts for child learning. Results also indicated that the relationships between interests and the study outcomes were similar for children with and without disabilities or delays. Implications for practice are described.

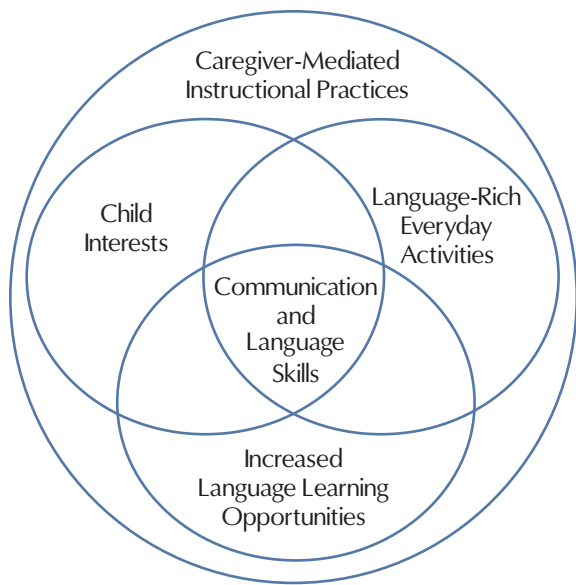


Figure 1. Four major components of the caregiver-mediated everyday language intervention model for facilitating early communication and language skill acquisition.

Renninger et al. (1992), both *personal* and *situational* interests influence child learning and development.

The ways in which we have investigated interests has also focused on the effects of whether or not interests have been incorporated into child learning opportunities (see e.g., Dunst, Trivette, & Hamby, 2012b). For example, in a research synthesis of the interest-based learning of young children with autism (Dunst, Trivette, & Hamby, 2012a), incorporating personal interests into learning activities had the largest effects on children's early social-communication abilities. As part of the research synthesis described in this paper, we specifically evaluated whether or not incorporating the personal or situational interests of young children with and without disabilities differentially influenced their early language development.

Search Strategy

Studies were located using *interest* OR *child interest* OR *child choice* OR *choice behavior* OR *interest* OR *interests* OR *childhood interest* OR *reading interests* OR *choice psychology* OR *novel* OR *novelty* AND *communication* OR *language* AND *infant* OR *infancy* OR *toddler* OR *neonatal* OR *preschool* OR *children* 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, and unpublished papers were used to locate additional studies. Studies were included if the majority of children were six years of age or younger and the correla-

tions between the child interest measures and the children's language development were reported by the investigators or could be computed from information in the primary studies.

Search Results

Forty-one studies were located that included 4058 children. Appendix A shows the background characteristics of the child participants. The average age of the children was 43 months (Range = 1 to 76). Half the children were female. Sixteen studies included children without disabilities or delays, 16 studies included children with disabilities or delays, and 3 studies included a mix of children with and without disabilities or delays. Twenty-six studies were conducted in the United States and 15 studies were conducted in other countries.

Appendix B includes information about the interest measures used in the studies. Twenty-two studies were investigations of children's personal interests or a combination of personal and situational interests, and 19 studies were investigations of situational interests. Fourteen studies were investigations of the relationship between incorporating interests into child learning opportunities and the study outcomes, whereas 28 studies were investigations of the relationship between interest measures not associated with child learning opportunities and the study outcomes. Studies were coded as incorporating interests into activities when an interest measure was specifically related to child participation or engagement in interest-based learning activities (e.g., Danis, 1997; Dunst, Trivette, & Masiello, 2011; Henderson, 1981). Studies were coded as not incorporating interests into activities when an interest measure was obtained independent of child participation or engagement in an activity and related to the study outcomes (e.g., Bracken & Fischel, 2008; Lyytinen, Laakso, & Poikkeus, 1998; Samuelsson et al., 2005).

The outcomes included different measures of child behavior categorized as social-communicative, expressive language, or receptive language (see Appendix C). The social-communication outcomes included nonverbal communicative acts, joint attention, and socially interactive behavior. Both the expressive language and receptive language measures included a mix of standardized language tests and behavioral ratings and recordings of child language abilities.

The weighted average correlation coefficient between child interests and the study outcomes were used as the sizes of effect for the relationship between the two 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 interests and outcome measures.

Synthesis Findings

Figure 2 shows the relationships between the two types of child interests which either were or were not incorporated into learning activities and the study outcomes. All of the average effect sizes were statistically significant at the $p =$

.0000 level. Nonetheless, there are clearly discernible differences between the strength of the relationships when child interests were incorporated into learning activities. The size of effect for personal interests was almost three times as large when interests were incorporated into activities compared to not incorporated into activities. The differences between the two situational interest measures were not as large but still appreciably different. In both sets of analyses, incorporating children's interests into everyday learning activities was associated with better communication and language outcomes.

The relationships between the interest measures and the different types of study outcomes are shown in Table 1. The average effect sizes for the relationships between child interests and the study outcomes ranged between $r = .43$ and $r =$

.53 when interests were incorporated into the activities, but only $r = .20$ and $r = .27$ when interests were not incorporated into child activities. In all four of the analyses, incorporating children's interests into everyday learning activities was associated with better communication and language outcomes compared to analyses when interests were not incorporated into children's learning activities.

The relationships between child interests and the study outcomes for three different groups of children are shown in Figure 3. The size of effects were very similar regardless of child condition where the average correlations were all significant at the $p = .0000$ level. Results showed that the relationships between children's interests and the study outcomes were much the same regardless of child condition.

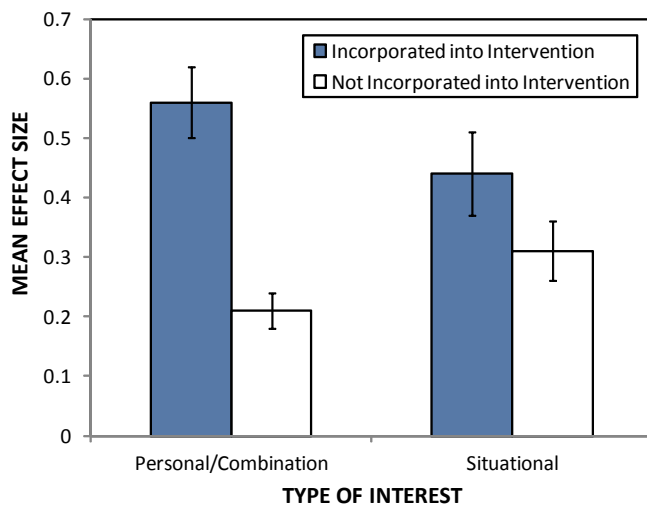


Figure 2. Average effect sizes and 95% confidence intervals for the two types of child interests either incorporated or not incorporated into child learning opportunities.

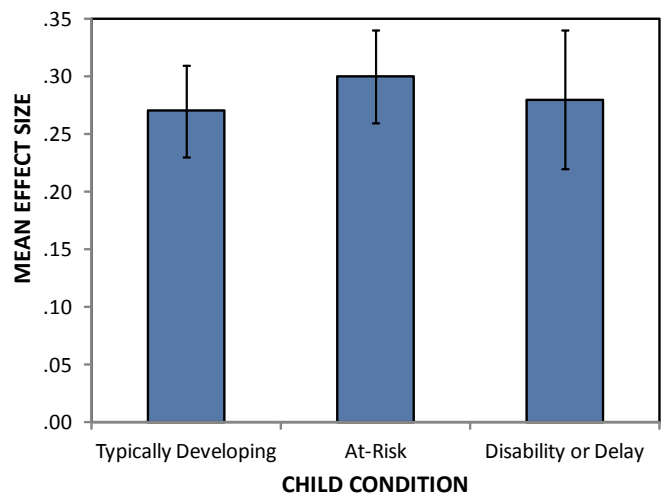


Figure 3. Average effect sizes and 95% confidence intervals for the relationships between the interest measures and study outcomes for three groups of children.

Table 1
Average Effect Sizes and 95% Confidence Intervals (CI) for the Relationships Between Child Interests and the Study Outcomes

Type of Interest	Number		Mean Effect Size	95% CI	Z-test	p-value
	Studies	Effect Size				
<i>Incorporated into Activities</i>						
Social-communication	6	7	.44	.33-.56	7.56	.0000
Expressive language	9	21	.53	.47-.59	17.15	.0000
Receptive language	2	2	.43	.24-.63	4.29	.0000
All outcomes combined	14	30	.50	.45-.56	19.18	.0000
<i>Not Incorporated into Activities</i>						
Social-communication	0	0	—	—	—	—
Expressive language	12	31	.20	.17-.24	11.98	.0000
Receptive language	25	47	.27	.25-.30	21.41	.0000
All outcomes combined	27	78	.25	.23-.27	24.33	.0000

Discussion

Results from the research synthesis described in this paper indicated that the different measures of children's personal and situational interests were associated with better communication and language outcomes where the strength of the relationships was strongest when interests were incorporated into child learning opportunities. These findings are similar to that found for other child outcomes (Dunst, Jones et al., 2011; Dunst et al., 2012a, 2012b; Raab & Dunst, 2007). Results also showed that the nature of the relationships between child interests and the study outcomes were much the same for children with and without disabilities or delays.

The interest-based child learning component of the *CE-CLL* model ensures that the activities and experiences afforded young children have development-instigating characteristics and development-enhancing consequences (Dunst et al., 2001). Interest-based child learning is more likely to elicit and sustain child engagement in everyday activities (Raab & Dunst, 2007) and provide the children's parents opportunities to use responsive teaching (Raab & Dunst, 2009) and other naturalistic instructional strategies (e.g., Dunst, Raab, & Trivette, 2011) to support and encourage child language learning while engaged in the interest-based activities. Findings from this research synthesis add to our knowledge and understanding of how interests function as either or both individual (personal) or environmental (situational) factors influencing child learning and development (Bronfenbrenner, 1992).

Findings from the research synthesis have a number of implications for practice. First, identification and use of children's personal interests as part of their engagement with people and materials during everyday activities is likely to set the occasion for acquiring communication and language abilities. Second, use of situational interests that have development-instigating features are also likely to provide contexts for learning communication and language abilities. The assessment and intervention practices that are used as part of the *CECLL* model are specifically designed to accomplish both of these goals (Dunst, Trivette et al., 2013a, 2013b).

Conclusion

The purpose of the interest-based component of the *Center for Everyday Child Language Learning* model is to provide young children development-enhancing communication and language learning opportunities in the context of everyday family and community activities by incorporating personal and situational interests into the activities. Results from the research synthesis described in this paper provide empirical support for this approach to child communication and language learning.

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Authors

Melinda Raab, Ph.D., is an Associate Research Scientist at the Orelena Hawks Puckett Institute in Asheville and Morganton, North Carolina. Carl J. Dunst, Ph.D., is the Co-Director and Research Scientist at the Puckett Institute. Deborah W. Hamby, M.P.H., is a Research Analyst at the Puckett Institute.

Appendix A

Background Characteristics of the Child Participants

Study	Number	Child Age (Months)		Child Gender		Ethnicity	Percent	Child Condition	
		Mean	Range	F	M			Type	Percent
Baroody (2007)	58	56	NR	30	28	Caucasian African American Latino	76 14 10	At risk	100
Baroody & Diamond (2012)	81	56	NR	35	46	Caucasian African American Latino Other	67 17 12 4	At risk	100
Baroody et al. (2007)	100	59	NR	49	51	Caucasian Latino African American American Indian	69 17 9 5	At risk	100
Bracken & Fischel (2008)	233	52	<48-59	NR	NR	Latino African American Multiracial Caucasian Other	43 43 6 5 2	At risk	100
Bruder et al. (2004)	24	21	15-26+	16	8	Latino	100	At risk	100
Collins (2010)	80	54	48-64	38	42	Caucasian Black	96 4	At risk	100
Danis (1997) Sample 1	6	5	5-6	4	2	NR		Typically developing	100
Danis (1997) Sample 2	6	9	8-10	2	4	NR		Typically developing	100
DeBaryshe (1992, 1995) Study 1	60	47	26-60	27	33	African American Caucasian	77 23	At risk	100
DeBaryshe (1995) Study 2	56	38	26-56	26	30	African American Caucasian	66 34	NR	
Deckner (2002) Deckner et al. (2006)	55	27	27-28	29	26	Caucasian African American Asian American	82 16 2	NR	
Dunst et al. (2001)	63	38	1-72	19	44	Caucasian Latino African American American Indian Asian Pacific Islander Other	22 22 17 16 11 10 2	Speech impairment Physical Chromosomal Delayed Sensory impairment Medically at risk Autism	21 19 19 16 11 10 5
Dunst et al. (2011) Trivette & Dunst (2011)	17	56	23-71	4	13	NR		Autism	100
Dunst et al. (2007, 2011)	49	38	5-70	19	30	Caucasian Latino American Indian African American	80 14 4 2	Physical disability Delayed Multiple disabilities Chromosomal Autism Speech impairment At risk	29 22 14 12 8 8 6
Farver et al. (2006)	122	45	39-49	65	57	Latino	100	Typically developing	100
Frijters et al. (2000)	92	68	63-76	42	50	Caucasian	100	Typically developing	100
Haskett (1977) Study 1	4	53	36-72	2	2	Caucasian African American	75 25	Typically developing	100
Haskett (1977) Study 2	4	50	34-61	2	2	Caucasian	100	Typically developing	100
Henderson (1979)	36	47	42-54	18	18	NR		Typically developing	100
Henderson (1981)	48	53	36-60	24	24	NR		Typically developing	100
Henderson & Moore (1980)	48	54	42-60	24	24	NR		Typically developing	100

Appendix A, continued.

Study	Number	Child Age (Months)		Child Gender		Ethnicity	Percent	Child Condition	
		Mean	Range	F	M			Type	Percent
Laakso et al. (2004) Sample 1	74	14	–	35	39	Caucasian	100	At risk for reading disabilities	100
Laakso et al. (2004) Sample 2	82	14	–	38	44	Caucasian	100	Typically developing	100
Lyytinen et al. (1998)	108	24	NR	46	62	Caucasian	100	Typically developing	100
Mason et al. (1992)	127	~60	NR	NR	NR	Caucasian African American Asian	87 12 1	NR	
Olson (1983)	30	NR	25-75	NR	NR	NR		Typically developing Visually impaired	50 50
Payne et al. (1994)	236	54	45-65	106	130	Caucasian African American Latino Asian American	50 42 6 2	At risk	
Peeters et al. (2008) Sample 1	62	72	NR	29	33	NR		Typically developing	100
Peeters et al. (2008) Sample 2	40	72	NR	17	23	NR		Cerebral palsy Speech impairment: None Mild to moderate Severe	100 48 30 23
Pipp-Siegel et al. (2003)	200	26	7-67	113	87	Caucasian Latino African American Asian American American Indian Other	68 14 3 3 1 11	Hearing loss: Mild Moderate Moderate-severe Severe Profound Multiple disabilities	19 15 20 18 28 38
Roberts et al. (2005)	72	18	–	39	33	African American	100	Typically developing	100
Samuelsson et al. (2005)	1254	NR	47-71	680	574	NR		NR	
Sonnenschein et al. (1996)	35	58	NR	NR	NR	African American Caucasian	NR NR	Typically developing	100
Thompson et al. (1991)	113	5	–	NR	NR	NR		Typically developing	100
Torppa et al. (2007) Sample 1	96	24	–	50	46	Caucasian	100	At risk for reading disability	100
Torppa et al. (2007) Sample 2	90	24	–	40	50	Caucasian	100	Typically developing	100
van der Schuit et al. (2009)	48	54	NR	13	35	NR		Developmental delay Autism/ADD Down syndrome Seizure disorder Motor delay Dyspraxia Sensory impairment	46 21 10 8 6 4 4
Warreyn et al. (2007) Sample 1	18	48	26-66	NR	NR	NR		Autism PDD-NOS	56 44
Warreyn et al. (2007) Sample 2	18	44	22-61	NR	NR	NR		Regulatory disorder (hypersensitive) Regulatory disorder (impulsive) Typically developing	33 33 33
Weigel et al. (2006)	85	50	NR	40	45	Caucasian Latino Asian American Other	93 2 1 4	NR	
Wells et al. (1984)	32	60 ^a	–	16	16	NR		NR	

NOTE. NR = Not Reported

Appendix B

Characteristics of the Interest Measures Used in the Studies

Study	Setting	Interest Measure		
		Type of Interest	Definition	Assessment Procedure
Baroody (2007)	–	Personal	<i>Literacy interest</i> (extent to which child likes nine literacy activities related to reading, writing, letters)	Child report
Baroody & Diamond (2012)	–	Personal	<i>Literacy Interest</i> (extent to which child likes nine literacy activities related to reading, writing, letters)	Child report
Baroody et al. (2007)	–	Personal	<i>Literacy interest</i> (extent to which child likes looking at books, listening to books being read; learning about names and sounds of letters, words that rhyme)	Child report
Bracken & Fischel (2008)	–	Combination	Child's <i>reading interest</i> (frequency of looking at books alone and requests for shared reading; level of enjoyment of shared reading)	Parent report
Bruder et al. (2004)	Everyday family and community activities	Combination	Extent to which activities were fun and enjoyable to child	Parent report
Collins (2010)	Preschool reading room	Personal	Frequency of asking to be read to	Parent report
Danis (1997) Sample 1 Sample 2	Child care center	Situational	Three toys unfamiliar (novel) to the child	Parent report
DeBaryshe (1992, 1995) Study 1	–	Combination	<i>Reading interest</i> (frequency of looking at books alone, asking to be read to; level of enjoyment)	Parent report
DeBaryshe (1995) Study 2	–	Combination	<i>Reading interest</i> (frequency of asking to be read to; level of enjoyment of joint reading)	Parent report
Deckner (2002) Deckner et al. (2006)	–	Situational	<i>Reading interest</i> (ratings of availability, affect, and active participation during shared reading)	Observation
Dunst et al. (2001)	Everyday home and community activities	Combination	Activities that parent thought would be fun and enjoyable to child; extent to which activity was interesting, enjoyable, competence producing, promoted exploration and new behaviors	Parent report Observation
Dunst et al. (2011) Trivette & Dunst (2011)	Everyday home and community activities	Combination	People, toys, events, etc., that made the child laugh, smile, get excited; things engaging the child in interactions and he/she enjoyed	Parent report
Dunst et al. (2007, 2011)	Everyday home and community activities	Combination	Extent to which activity was interesting, enjoyable, competence producing, promoted exploration and new behaviors	Parent report
Farver et al. (2006)	–	Personal	Literacy interest (frequency child asks to be read to, looks at books alone, asks what printed words say, tries to write words, plays alphabet games)	Parent report
Frijters et al. (2000)	Laboratory	Personal	Literacy interest (extent to which child had positive feelings about looking at books alone, getting books for presents, going to library, reading)	Child report
Haskett (1977) Study 1	Laboratory playroom	Situational	Novel Toys	Parent report (to confirm novelty of materials)
Haskett (1977) Study 2	Laboratory playroom	Situational	Novel toys	Parent report (to confirm novelty of materials)
Henderson (1979)	Preschool	Situational	Novel perceptual toy Novel problem-solving toy Bizarre toy	–
Henderson (1981)	Laboratory	Situational	Novel perceptual toy with movable parts Novel problem-solving toy requiring child to remove novelty items through small opening	–
Henderson & Moore (1980)	Laboratory	Situational	Novel perceptual toys with movable parts and attached toys and pictures Novel problem-solving toys (goal-oriented) with small toys that could be removed	–

Appendix B, continued.

Study	Setting	Type of Interest	Interest Measure	
			Definition	Assessment Procedure
Laakso et al. (2004) Sample 1 Sample 2	Laboratory	Situational	<i>Reading interest</i> (extent of child's participation in shared reading episode, rated interest, and duration of engagement with book)	Observation
Lyytinen et al. (1998)	Laboratory	Personal Situational	<i>Literacy interest</i> (frequency of initiating reading) <i>Literacy interest</i> (duration of reading interactions)	Parent report
Mason et al. (1992)	School	Combination Personal	<i>Literacy interest</i> (child reading to self and others, parent reading to child from early age, child seldom watching television, parent having positive view of child) <i>Story-centered activities</i> (frequency and duration parent reads to child; child asking to be read to, looking at books alone, reading to parent)	Parent report
Olson (1983)	Preschool or home setting	Situational	Novel problem-solving toy (four red and blue wheels that rotated on a spindle so that notches could be aligned to sound a buzzer)	–
Payne et al. (1994)	–	Personal	<i>Literacy interest</i> (frequency of asking to be read to)	Parent report
Peeters et al. (2008) Sample 1 Sample 2	–	Personal	<i>Literacy interest</i> (frequency asking to be read to; interest in storybook reading)	Parent report
Pipp-Seigel et al. (2003)	–	Situational	<i>Social/symbolic persistence</i> (likes and is involved for a long time) <i>Mastery pleasure</i> (degree of pleasure at accomplishments)	Parent report
Roberts et al. (2005)	–	Situational	<i>Reading interest</i> (extent to which child enjoys being read to)	Parent report
Samuelsson et al. (2005)	–	Combination	<i>Print Motivation</i> (frequency of child initiating reading activities; amount engaged in ongoing reading activity)	Parent report
Sonnenschein et al. (1996)	Public school	Situational	Literacy used as source of “entertainment”	Parent report
Thompson et al. (1991)	Laboratory	Situational	Visual novelty preference	Observation
Torppa et al. (2007) Sample 1 Sample 2	Laboratory	Personal	Extent of child's interest in picture books and storytelling	Parent report
van der Schuit et al. (2009)		Personal	<i>Literacy interest</i> (frequency using child books, frequency asking to be read to; interest in storybook reading)	Parent report
Warreyn et al. (2007) Sample 1 Sample 2	Laboratory playroom	Situational	Four unfamiliar interesting events shown to child (moving elephant on multi-colored string; soap bubbles with sound of bells; two videos, one positive, one negative)	–
Weigel et al. (2006)	Home	Personal	<i>Reading interest</i> (frequency and duration of child looking at books alone; frequency of asking to be read to)	Parent report
Wells et al. (1984)		Situational	<i>Child concentration</i> (degree of concentration child displays when engaged in literacy activities)	Parent report

Appendix C

Effect Sizes for the Relationship Between the Interest Measures and Study Outcomes

Study	Interest Measure			Outcome Measure ^a		
	Interest Focus	Type of Interest	Child Age (Months)	Outcome	Child Age (Months)	Effect Size (r)
Baroody (2007)	Literacy	Personal	56	Receptive language (PPVT-III)	56	.02
			56	Expressive language (Get It, Got It, Go)	56	-.08
Baroody & Diamond (2012)	Literacy	Personal	56	Receptive language (PPVT-III)	56	.10
Baroody et al. (2007)	Literacy	Personal	59	Receptive language (PPVT-III)	59	.03
Bracken & Fischel (2008)	Literacy	Combination	52	Receptive language (PPVT-III)	52	.23
Bruder et al. (2004)	Everyday activities	Combination	21	Number of one-word utterances	25	.59
			21	Number of one- and two-word utterances	25	.55
			21	Number of novel words	25	.45
			21	Number of diverse words	25	.58
			21	Increases in one-word utterances	25	.73
			21	Increases in one- and two-word utterances	25	.72
			21	Increases in novel words	25	.51
			21	Increases in diverse words	25	.73
Collins (2010)	Literacy	Personal	54	Receptive language (PPVT-III)	54	.21
			54	Expressive language	54	.29
			54	Target vocabulary	54	.42
Danis (1997) Sample 1	Novelty	Situational	5	Infant-mother joint engagement	5	.42
Danis (1997) Sample 2	Novelty	Situational	9	Infant-mother joint engagement	9	.49
DeBaryshe (1992, 1995) Study 1	Literacy	Combination	47	Language competence (PPVT-R, EOWPVT, ITPA)	47	.26
DeBaryshe (1995) Study 2	Literacy	Combination	38	Language competence (PPVT-R, EOWPVT, ITPA)	38	.22
Deckner (2002)	Literacy	Situational	27	Expressive language (EVT)	30	.40
Deckner et al. (2006)			27	Expressive language (EVT)	42	.27
			27	Receptive language (PPVT-III)	30	.04
			27	Receptive language (PPVT-III)	42	.16
Dunst et al. (2001)	Everyday activities	Combination	38	Everyday performance (social affective, social interaction, communication, volitional behavior)	42	.37
			38	Child progress (ambulation, communication, social adaptive, socialization)	42	.31
Dunst et al. (2011)	Everyday activities	Combination	56	Language progress (DOC)	60	.28
Trivette & Dunst (2011)			56	Social responsiveness	59	.34
Dunst et al. (2007, 2011)	Everyday activities	Combination	38	Developmental progress (DOC)	42	.47
Farver et al. (2006)	Literacy	Personal	45	Receptive language (PPVT-R, TVIP)	45	.38
Frijters et al. (2000)	Literacy	Personal	68	Receptive language (PPVT-R)	68	.07
Haskett (1977) Study 1	Novel toys	Situational	53	Verbalizations	53	.89
Haskett (1977) Study 2	Novel toys	Situational	50	Verbalizations	50	.78
Henderson (1979)	Novel perceptual toys	Situational	47	Number of questions	47	.43
Henderson (1981)	Novel perceptual toys	Situational	53	Number of questions	53	.28
	Novel problem-solving toys	Situational	53	Number of questions	53	.28
	Novel bizarre toys	Situational	53	Number of questions	53	.28
Henderson & Moore (1980)	Novel perceptual toys	Situational	54	Number of questions	54	.37

Appendix C, continued.

Study	Interest Measure		Child Age (Months)	Outcome Measure		
	Interest Focus	Type of Interest		Outcome	Child Age (Months)	Effect Size (r)
Laakso et al. (2004) Sample 1	Reading interest	Situational	14	Global language skills (BNT, PPVT-R, IMT, NEPSY)	42	.18
			24	Global language skills	42	.15
Laakso et al. (2004) Sample 2	Literacy	Situational	14	Global language skills (BNT, PPVT-R, IMT, NEPSY)	42	.28
			24	Global language skills	42	.21
Lyytinen et al. (1998)	Frequency of initiatives for reading	Personal	24	Vocabulary production (MCDI)	24	.13
			24	Use of suffixes	24	.09
			24	Maximum sentence length	24	.10
			24	Expressive language (BSID)	24	.02
	Duration of reading interactions	Situational	24	Vocabulary production (MCDI)	24	.20
			24	Use of suffixes	24	.16
			24	Maximum sentence length	24	.04
			24	Expressive language (BSID)	24	.02
Mason et al. (1992)	Literacy interest	Combination	60	Language understanding	60	.24
	Story-centered activities	Personal	60	Language understanding	60	.15
Olson (1983)	Novelty	Situational	50	Verbal initiations	50	.04
			50	Verbalizations about solution of novel toy	50	.33
Payne et al. (1994)	Frequency of asking to be read to	Personal	54	Receptive language (PPVT-R)	54	.21
			54	Expressive language (EOWPVT)	54	.18
Peeters et al. (2008) Sample 1	Literacy	Personal	72	Receptive Vocabulary (PPVT-III)	72	.03
Peeters et al. (2008) Sample 2	Literacy	Personal	72	Receptive Vocabulary (PPVT-III)	72	.04
Pipp-Siegel et al. (2003)	Mastery pleasure	Situational	26	Expressive language (MCDI)	26	.21
	Social/symbolic persistence	Situational	26	Expressive language (MCDI)	26	.28
Roberts et al. (2005)	Literacy	Situational	30	Expressive language (CELF-P)	48	.44
			30	Expressive language (CELF-P)	60	.36
			30	Receptive language (CELF-P)	48	.34
			30	Receptive language (CELF-P)	60	.20
			30	Receptive language (PPVT-R)	60	.24
Samuelsson et al. (2005)	Print motivation	Combination	59	General verbal ability	59	.29
Sonnenshein et al. (1996)	Literacy entertainment	Situational	58	Narrative competence (Story reading/retelling, recent event narrative, language comprehension)	58	.14
			58	Narrative competence	70	.48
Thompson et al. (1991)	Novelty preference	Situational	6	Verbal skills (BSID)	12	.43
			6	Verbal-symbolic skills (BSID)	36	.19
			6	Verbal Skill (SCA Battery)	36	.35
			6	Receptive language (SICD)	24	.28
			6	Receptive language (SICD)	36	.62
			6	Expressive language (SICD)	24	.19
			6	Expressive language (SICD)	36	.41
6	Total language (SICD)	24	.25			

Appendix C, continued.

Study	Interest Measure		Child Age (Months)	Outcome Measure		
	Interest Focus	Type of Interest		Outcome	Child Age (Months)	Effect Size (r)
Thompson et al. (1991, continued)	Novelty preference	Situational	6	Total language (SICD)	36	.53
Torppa et al. (2007) Sample 1	Literacy	Personal	24	Expressive vocabulary (BNT)	42	.16
			24	Expressive vocabulary (BNT)	66	.15
			48	Expressive vocabulary (BNT)	66	.27
			60	Expressive vocabulary (BNT)	66	.49
			24	Receptive vocabulary (PPVT-R)	42	.09
			24	Receptive vocabulary (PPVT-R)	60	.20
			48	Receptive vocabulary (PPVT-R)	60	.36
			60	Receptive vocabulary (PPVT-R)	60	.44
Torppa et al. (2007) Sample 2	Literacy	Personal	24	Expressive vocabulary (BNT)	42	.18
			24	Expressive vocabulary (BNT)	66	.11
			48	Expressive vocabulary (BNT)	66	.16
			60	Expressive vocabulary (BNT)	66	.16
			24	Receptive vocabulary (PPVT-R)	42	.09
			24	Receptive vocabulary (PPVT-R)	60	.11
			48	Receptive vocabulary (PPVT-R)	60	.20
			60	Receptive vocabulary (PPVT-R)	60	.12
van der Schuit et al. (2009)	Literacy	Personal	54	Receptive language (RTLIC)	54	.03
			54	Productive syntax (STLP)	54	.18
			54	Productive vocabulary (STLP)	54	-.01
Warreyn et al. (2007) Sample 1	Interesting objects	Situational	48	Nonverbal communication (point, reach, give, show)	48	.56
			48	Verbal communication (vocalize, ask, babble)	48	.35
			48	Vocalize	48	.18
Warreyn et al. (2007) Sample 2	Interesting objects	Situational	44	Nonverbal communication (point, reach, give, show)	44	.68
			44	Verbal communication (vocalize, ask, babble)	44	.44
			44	Vocalize	44	.15
Weigel et al. (2006)	Literacy	Personal	50	Expressive language (PLS-3)	50	.25
			62	Expressive language (PLS-3)	62	.07
			50	Receptive language (PLS-3)	50	.18
			62	Receptive language (PLS-3)	62	.06
Wells et al. (1984)	Literacy	Situational	60	Receptive language (EPVT)	60	.43
			60	Oral comprehension	60	.60

^aMeasures used to assess the child outcomes:

- BSID = *Bayley Scales of Infant Development* (Bayley, 1969)
 BNT = *Boston Naming Test* (Finnish adaptation; Laine, Koivuselkä-Sallinen, Hänninen, & Niemi, 1997)
 CELF-P = *Clinical Evaluation of Language Fundamentals-Preschool* (Wiig, Secord, & Semel, 1992)
 DOC = *Developmental Observation Checklist* (Hresko, Miguel, Sherbenou, & Burton, 1994)
 EOWPVT = *Expressive One-Word Picture Vocabulary Test* (Gardner, 1981)
 EPVT = *English Picture Vocabulary Test* (Brimer & Dunn, 1963)
 EVT = *Expressive Vocabulary Test* (Williams, 1997)
 IMT = *Inflectional Morphology Test* (Lyytinen, 1987)
 ITPA = *Illinois Test of Psycholinguistic Abilities* (Kirk, McCarthy, & Kirk, 1968)
 MCDI = *MacArthur Child Development Inventory* (Fenson et al., 1993)
 NEPSY = *Developmental Neuropsychological Assessment* (Korkman, Kirk, & Kemp, 1998)
 PPVT-R = *Peabody Picture Vocabulary Test-Revised* (Dunn & Dunn, 1981)
 PPVT-III = *Peabody Picture Vocabulary Test (3rd Ed.)* (Dunn & Dunn, 1997)

Appendix C, continued.

PLS-3 = *Preschool Language Scale-Third Edition* (Zimmerman, Steiner, & Pond, 1992)

RTL C = *Reynell Test for Language Comprehension* (Dutch version; Van Eldik et al. 2004)

SCA = Specific cognitive abilities battery (Verbal Ability) (Rice, Corley, Fulker, & Plomin, 1986)

SICD = *Sequenced Inventory of Communication Development* (Hedrick, Prather, & Tobin, 1975)

STLP = *Schlichting Test for Language Production* (Schlichting et al., 2003)

TVIP = *Test de Vocabulario en Imagenes Peabody* (Dunn, Lugo, Padilla, & Dunn, 1986)