Everyday Child Language Learning Reports

Methods for Increasing Child Participation in Everyday Learning Opportunities

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The development, implementation, and evaluation of an early childhood language intervention model that uses everyday family and community activities as sources of interest-based child learning opportunities to promote communication and language competence has been the focus of investigation by staff at the *Center for Everyday Child Language Learning (CECLL)* (Dunst, Trivette, & Raab, 2013a, 2013b). The model, which includes four components, is shown in Figure 1. The four components include child interests, 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 purpose of the research synthesis described in this paper was to evaluate the effectiveness of different methods and procedures for increasing child participation in everyday family and community activities and to identify the conditions under which participation was optimized. Research syntheses of practices in the other *CECLL* model components are described in Dunst et al. (2013) and Raab et al (2013; 2013).

The focus of increasing child participation in the everyday learning opportunities component of the *CECLL* model is to ensure young children with developmental disabilities or delays experience the kinds of learning opportunities that will support and encourage communication and language competence. Everyday activities can only have positive effects on learning and development if children have a sufficient number of opportunities to participate in different kinds of settings having both development-instigating and development-enhancing qualities (Bronfenbrenner, 1992). *Development-instigating* means environmental characteristics and features that invite, encourage, and sustain child interactions with people and objects. *Development-enhancing* means the consequences of those interactions, including, but not limited to, child communication and language behavior and competence.

The term *opportunity* refers to the variety of everyday experiences and activities for children to practice existing abilities and learn new competencies. Child learning opportunities include both

The effects of two different methods (activity schedules and activity lists) for increasing child participation in everyday learning activities were examined in 14 studies including 505 children. Results showed that both methods were associated with increased child engagement and provision of child learning opportunities. Results also showed that activity schedules and lists had positive effects regardless of child diagnosis or the settings where the methods were used. Implications for practice are described.

participation in *different kinds* of interest-based everyday activities (breadth of learning) and the *number of learning opportunities* afforded in any one activity (depth of learning). Take, for example, a child who enjoys playing in water. Getting to play in water during bath time, using a hose to water plants and flowers, splashing in a puddle of water, and dropping pebbles in a stream or pond, are examples of the breadth of child participation in different kinds of everyday activity. Splashing in a wading pool, floating objects in the pool, filling and emptying a bucket of water while in the pool, and pretending to swim, are examples of the depth of interest-based learning opportunities in the same activity setting.

The opportunity to participate in everyday activities is recognized as an important feature of effective early childhood intervention and therapy practices (e.g., Duchan, 1995; Duchan, 1997; Dunst, 2001; Dunst et al., 2001; Kellegrew, 1998; Law et al., 1998). Duchan (1997), for example, noted that the "goals of a situated [contextual] approach to [speech and language therapy and intervention] focuses on increasing opportunities for…a child to participate in everyday-life activities" (p. 10) where participation is the context for child language learning and development. Methods and procedures that have been used to increase child participation in everyday learning activities include, but are not limited to, activity schedules (Ostrosky, Skellenger, Odom, McConnell, & Peterson, 1994), activity matrices (Dunst et al., 1987), and activity checklists (Swanson, Raab, & Dunst, 2011).

Search Strategy

Studies were located using *activity schedule* OR *activity checklist* OR *activity check list* OR *routine checklist* OR *routine check list* OR *activity matrix* OR *routine matrix* OR *reminder list* AND *infant* OR *toddler* OR *preschool* 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 examined to locate additional studies. Studies were included if the majority of children were 6 years of age or younger, some type of activity schedule or list was used by the children's parents to provide them learning opportunities, and an engagement or participation measure was used as a study outcome.

Search Results

Thirteen studies were located that included 505 children with and without developmental disabilities or delays. Selected characteristics of the participants are shown in Appendix A. The children were, on average, 51 months of age (Range = 20 to 96). There was an equal number of female and male participants. The children's conditions included autism, other identified disabilities, at-risk for poor outcomes, and
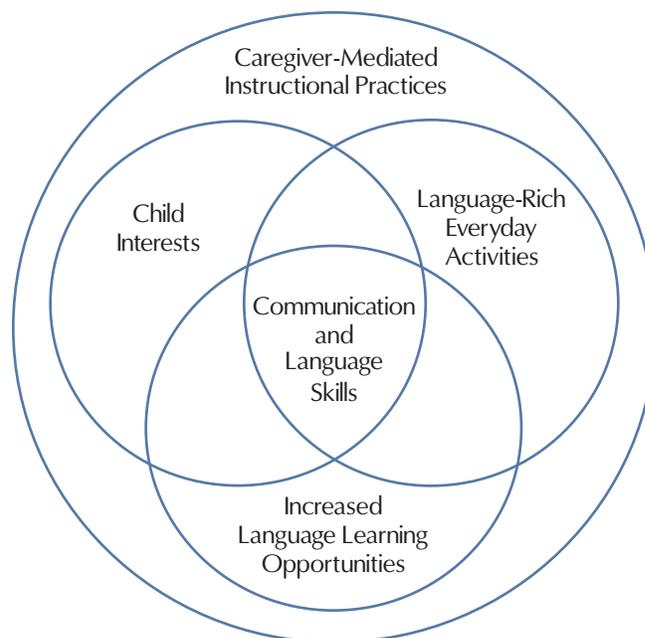

Figure 1. **Four major components of the caregiver-mediated everyday language intervention model for facilitating early communication and language skill acquisition.**

typically developing.

Appendix B includes information about the interventions constituting the focus of investigation and the outcomes that were used to evaluate the effects of the methods used to increase child participation in everyday learning activities. The methods used to increase child participation in learning activities included activity schedules (print, computer, or photographic) and activity lists (reminder lists or checklists). The methods and procedures were used in the children's homes, community-based settings, or a combination of both. The outcomes included measures of either child engagement in targeted activities or increased provision of child learning opportunities.

The investigators used either single participant designs or group designs to evaluate the effects of the interventions. Cohen's *d* effect sizes were used to estimate the effects of the activity schedules or lists on the two child outcomes. The mean difference between the pretest or baseline phases and the intervention phases of the studies divided by the pooled standard deviation for the two phases was used to compute the effect sizes for the influence of the activity schedules or lists on the study outcomes. The 95% confidence intervals for the effect sizes were used for substantive interpretation of the results. A confidence interval not including zero indicates that the average effect size differs significantly from zero at the $p < .05$ level.

Synthesis Findings

Table 1 shows the results from the analyses of the methods used by parents to increase child participation in every-

day family and community activities, type of child outcome, child condition, and intervention setting. The average effect sizes for all of the analyses were medium to large and statistically significant as evidenced by no confidence interval including zero.

Results showed that both the activity schedules and activity lists were effective in terms of increased child participation in child learning activities although the average effect size for activity schedules was nearly twice as large as that for activity lists. Increased child participation was manifested in terms of both child engagement and the number of learning opportunities afforded within activities. The methods for increasing child participation were similarly effective when used with children with any type of disability or delay. The methods were also similarly effective regardless of the settings in which the practices were used.

Discussion

Findings from the research synthesis described in this paper showed that parents' use of either activity schedules or activity lists was effective in increasing child engagement and participation in everyday activities but that activity schedules were more effective than activity lists in terms of both child engagement and number of child learning opportunities. Although this might be interpreted as meaning that activity schedules should be the method of choice for increasing everyday child learning opportunities, this may not be true in all instances. As part of a study investigating methods for increasing child participation in everyday family and community activities (Dunst et al., 2001), we specifically evaluated parents' preferences for either activity schedules or activity lists, and the largest number of parents preferred activity lists which they said reminded them of the activities that could be used as sources of everyday child learning opportunities. Therefore, it may be better to provide parents different options for increasing their children's participation in everyday family and community activities so that they can choose one that matches their preferences.

The differences in the effectiveness of activity schedules and activity lists deserve comment for another reason. Activity schedules have been typically used by professionals in center-based settings to structure the provision of learning opportunities for children with disabilities (e.g., Bailey & Wolery, 1992; Massey & Wheeler, 2000). The studies in this synthesis included only parents as intervention agents. It was somewhat surprising that only seven studies were located that have investigated the use of activity schedules with parents, and especially with a focus on identifying the characteristics of schedules that parents prefer and do not prefer. Results from this synthesis indicate a need for this type of study.

Conclusion

The particular component of the *Center for Everyday Child Language Learning* intervention model that was the focus of the research synthesis described in this paper is used to increase child participation in interest-based everyday family and community language learning opportunities. Results

Table 1

Average Effect Sizes and 95% Confidence Intervals (CI) for the Methods and Procedures for Increasing Everyday Child Learning Opportunities

Variables	Number		Mean Effect Size	95% CI
	Studies	Effect Sizes		
Type of Intervention				
Activity schedules	7	11	1.06	.86 - .77
Activity lists	11	14	.59	.40 - .77
Type of Outcome Measure				
Child engagement	9	13	.94	.70 – 1.18
Increased learning opportunities	11	12	.63	.43 - .84
Child Condition				
Autism	8	13	.93	.67 – 1.83
Developmentally disabled	4	6	.75	.45 – 1.04
Mixed	6	6	.55	.22 - .87
Setting				
Home	6	9	.78	.52 – 1.04
Community	7	9	.57	.34 - .80
Mixed	5	7	1.01	.75 – 1.45

from the research synthesis indicated that systematic, intentional efforts to accomplish this goal had the effect of increasing child engagement and participation in targeted learning activities.

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Appendix A

Background Characteristics of the Study Participants

Study	Sample Size	Child Age (Months) Mean	Child Age (Months) Range	Child Gender Male	Child Gender Female	Child Ethnicity	Child Percent	Child Condition
Bruder et al. (2000), Bruder (2003) (Study 1)	17	21	15-28	7	10	Latino	100	Typically developing
Bruder et al. (2000), Bruder (2003) (Study 2)	18	20	9-36	6	12	Latino	100	At-risk
Carmichael (2005)	1	72	–	1	0	NR	NR	Autism
Dugan (2007)	3	57	54-67	2	1	African American Caucasian	67 33	Autism
Dunst et al. (2001)	63	38	2-71	44	19	Caucasian Latino African-American Native American Asian Hawaiian Other	14 14 11 10 7 6 1	Developmentally disabled
Dunst (2008) (Study 1)	84	36	6-60	NR	NR	NR	NR	At-risk
Dunst (2008) (Study 2)	78	53	2-108	NR	NR	NR	NR	At-risk
Dunst et al. (2010)	17	56	23-71	13	4	NR	NR	Autism
Dunst et al. (2012) (Study 1)	124	22	12-60	52	72	Caucasian African-American Asian Latino Multi-racial Native-American	56 20 8 7 7 1	Typically developing, Developmentally disabled, Medical problems, Language delayed, Multiple delays, Other
Dunst et al. (2012) (Study 2)	92	25	12-60	46	46	Caucasian Latino Native-American Multi-racial Asian Other	71 10 10 3 1 4	Typically developing, Developmentally disabled, Medical problems, Language delayed, Multiple delays, Other
Kellegrew (1998) (Participant 1)	1	32	–	0	1	NR	NR	Developmentally disabled
Kellegrew (1998) (Participant 2)	1	28	–	1	0	NR	NR	Developmentally disabled
Kellegrew (1998) (Participant 3)	1	32	–	1	0	NR	NR	Developmentally disabled
Krantz et al. (1993) (Participant 1)	1	96	–	1	0	NR	NR	Autism
Krantz et al. (1993) (Participant 2)	1	72	–	1	0	NR	NR	Autism
Krantz et al. (1993) (Participant 3)	1	84	–	1	0	NR	NR	Autism
Pierce & Schreibman (1994) (Participant 1)	1	96	–	1	0	NR	NR	Autism
Pierce & Schreibman (1994) (Participant 2)	1	72	–	1	0	NR	NR	Autism

Appendix B

Cohen's d Effect Sizes for the Influences of the Interventions on the Child Outcomes

Study	Type of Design	Intervention	Comparison	Outcome Category	Outcome Measure	Effect Size
Bruder et al. (2000), Bruder (2003) (Study 1)	One group Pre-post	Activity reminder list	Pre/post-test comparison	Learning opportunities	Increased participation in everyday activity settings	.40
Bruder et al. (2000), Bruder (2003) (Study 2)	One group Pre-post	Activity reminder list	Pre/post-test comparison	Learning opportunities	Increased participation in everyday activity settings	.03
Carmichael (2005)	Single participant	Computer activity schedule	Baseline/ intervention	Engagement	Increased engagement in everyday activities	2.05
Dugan (2007)	Between group	Picture activity schedule	Post-test/ (maintenance) difference	Engagement	Increased engagement in everyday activities	1.96
Dunst et al. (2001)	One group Pre-post	Activity reminder list	Pre/post-test comparison	Learning opportunities	Increased number of child learning opportunities	.60
				Engagement	Frequency of participation in everyday activities	.26
				Learning opportunities	Number of different learning activities	.98
Dunst et al. (2008) (Study 1)	One group Pre-post	Activity checklist	Pre/post-test comparison	Learning opportunities	Increased participation in everyday community activities	.83
Dunst et al. (2008) (Study 2)	One group Pre-post	Activity checklist	Pre/post-test comparison	Learning opportunities	Increased participation in everyday community activities	.55
Dunst et al. (2010)	One group Pre-post	Activity reminder list	Pre/post-test comparison	Learning opportunities	Increased participation in everyday activity settings	.10
				Engagement	Increased engagement in everyday activity settings	.32
Dunst et al. (2012) (Study 1)	One group Pre-post	Activity checklist	Pre/post-test comparison	Learning opportunities	Increased participation in everyday activity settings	.87
Dunst et al. (2012) (Study 2)	One group Pre-post	Activity checklist	Pre/post-test comparison	Learning opportunities	Increased participation in everyday activity settings	.61
Kellegrew (1998) (Participant 1)	Single participant	Reminder list	Baseline/ intervention	Learning opportunities	Increased participation in activities of daily living	1.94
Kellegrew (1998) (Participant 2)	Single participant	Reminder list	Baseline/ intervention	Learning opportunities	Increased participation in activities of daily living	1.83
Kellegrew (1998) (Participant 3)	Single participant	Reminder list	Baseline/ intervention	Learning opportunities	Increased participation in activities of daily living	1.51
Krantz et al. (1993) (Participant 1)	Single participant	Photographic activity schedule	Baseline/ intervention	Engagement	Increased engagement in everyday activities	1.98
Krantz et al. (1993) (Participant 2)	Single participant	Photographic activity schedule	Baseline/ intervention	Engagement	Increased engagement in everyday activities	1.86
Krantz et al. (1993) (Participant 3)	Single participant	Photographic activity schedule	Baseline/ intervention	Engagement	Increased engagement in everyday activities	1.90
Pierce & Schreibman (1994) (Participant 1)	Single participant	Activity schedule	Baseline/ intervention	Engagement	Increased engagement in activities of daily living	2.00
					Increased engagement in activities of daily living	1.92
					Increased engagement in activities of daily living	1.91
Pierce & Schreibman (1994) (Participant 2)	Single participant	Activity schedule	Baseline/ intervention	Engagement	Increased engagement in activities of daily living	1.91
					Increased engagement in activities of daily living	1.91
					Increased engagement in activities of daily living	1.94