

# Strengthening family capacity to provide young children everyday natural learning opportunities

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**Jennifer Swanson**

Orelena Hawks Puckett Institute, USA

**Melinda Raab**

Orelena Hawks Puckett Institute, USA

**Carl J Dunst**

Orelena Hawks Puckett Institute, USA

## Abstract

A capacity-building approach to natural learning environment intervention practices was the focus of the study. Capacity-building early childhood intervention promotes parents' or other caregivers' skills, abilities, and confidence to provide children development-enhancing learning opportunities. Natural environment practices use everyday experiences, events, and places as sources of child learning opportunities that promote child competencies. The manner in which the capacity-building intervention approach enhanced caregivers' abilities to provide their young children everyday natural learning opportunities was examined in this study. The participants were four adult caregivers (three mothers, one grandmother) and four preschool children with developmental delays. A multiple baseline design across participants was used to assess the effects of the intervention on different caregiver capacity-building behaviors. Findings showed discernable improvements in caregiver competence and confidence as evidenced by the patterns of results and the percent of non-overlapping baseline–intervention phase dependent measure scores. Implications for understanding both the characteristics of family capacity building and the use of capacity-building practices as part of parent involvement in early childhood intervention and education programs are described.

## Keywords

caregiver competence, caregiver confidence, early intervention, family capacity-building

## Introduction

Most early childhood parent involvement programs are premised on the belief that the experiences afforded parents and the interventions used to promote parent participation will improve parent

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### Corresponding author:

Melinda Raab, Orelena Hawks Puckett Institute, 8 Elk Mountain Road, Asheville, NC 28804, USA

Email: [mraab@puckett.org](mailto:mraab@puckett.org)

capacity to promote child learning and development (e.g. Carpenter, 1997; Everts et al., 1992; Reynolds, 2003). For example, the Individuals with Disabilities Education Improvement Act early intervention program in the United States has as an explicit goal the provision of 'supports and services to enhance the family's capacity to meet the developmental needs of the family's infant or toddler' (Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. §1400 et seq., 2004).

The purpose of the study described in this article was to determine if a promotional approach to natural learning environment interventions (Dunst, 2006) strengthened family capacity to provide their young children with developmental delays everyday natural learning opportunities. Natural learning opportunities are the everyday experiences children have as part of participation in family and community activities (Dunst et al., 2001b). Research has shown that children's everyday experiences are likely to enhance their development when the experiences are interest-based, engaging, and provide children opportunities to use existing abilities, recognize the effects of their actions on their environment, and try out and learn new skills (Dunst et al., 2001a).

The extent to which parent, caregiver, or family capacity is influenced by early childhood intervention has been examined in a number of studies. For example, Bailey et al. (2004), as part of the National Early Intervention Longitudinal Study, assessed family capacity by answering the question 'Did early intervention enable the family to help their child grow, learn, and develop?' (p. 11). Three indicators were used to assess family capacity: how to care for the basic needs of a child, how to help a child learn and develop, and how to deal with challenging child behavior. Parents responded to each type of competence indicator by *strongly agreeing*, *agreeing*, *disagreeing*, or *strongly disagreeing* about their ability to perform each parenting task. Eighty-five percent of the parents strongly agreed with the basic needs indicator, 64 percent strongly agreed with the learning and development indicator, while only 32 percent strongly agreed that they could deal with challenging child behavior.

Similar kinds of variations in family and parent capacity have been found in other studies (e.g. Adams, 2003; Guimond et al., 2008; Reeves, 2003; Rodger et al., 2008). In some instances, participation in early intervention was associated with positive appraisals of parenting capabilities, while in other instances, participation was associated with an attenuated sense of parenting competence and confidence. For example, Rodger et al. (2008) found that early intervention compromised a sense of parenting competence for some parents which in turn negatively affected their satisfaction with the services they and their children received.

The fact that there is such variability in parents' judgements of their capabilities indicates that the interventions afforded the parents, at least in part, were differentially affected by early intervention. That is, some early intervention program participants were likely to feel extremely competent while others were likely to feel less competent. As part of research syntheses by Dunst et al. (2006b, 2008), parenting competence and confidence were found to be influenced by family-centered help giving practices mediated by parents' self-efficacy beliefs. (See also Morawska and Sanders, 2006; Rodger et al., 2008; Shannon, 2004, for studies of other practitioner behaviors associated with differential family benefits of early intervention.) This would suggest that variations in the results found in the studies cited above may be due to differences in the ways in which the interventions were implemented, and how practitioners interacted with the parents and their families.

Traditional approaches to early intervention often minimize parents' or other caregivers' roles in promoting children's development. These approaches typically involve caregivers as passive observers of early intervention practitioners who work directly with children to teach them developmental skills to achieve intervention goals (Campbell and Sawyer, 2009; Mahoney and Wiggers, 2007; McBride and Peterson, 1997). In traditional approaches to intervention, caregivers often are

expected to implement prescribed developmental activities at home; however, they are provided little direct support that strengthens their capacity to promote child learning (Hebbeler and Gerlach-Downie, 2002). A capacity-building approach to early intervention, on the other hand, actively involves caregivers in acquiring knowledge and skills to accomplish desired goals. In a capacity-building approach, practitioners provide caregivers information, guidance, and support to help them adopt practices that promote their children's development, which in turn strengthens parenting confidence and competence (e.g. Dunst et al., 2001c).

The study described in this article assessed whether a capacity-building approach to practitioner help giving influenced caregivers' abilities to provide their children interest-based, everyday natural learning opportunities in the context of the families' homes and communities (Dunst, 2006; Dunst and Swanson, 2006). The approach to intervention used in the investigation promoted and strengthened parents' and other caregivers' abilities to: 1) identify their children's interests, 2) identify the everyday activities that provide the children interest-based learning opportunities, 3) increase child participation in those activities, and 4) use responsive teaching procedures to reinforce existing child competence and promote new child behavior.

Both as part of this approach to early intervention and as part of our other research and practice (e.g. Dunst and Trivette, 2009a), we have conceptualized family (parent, caregiver) capacity as a combination of behavioral skills and efficacy beliefs (Bandura, 1997) that influence an ability to perform or execute different tasks. Caregivers' behavioral skill development is operationalized in terms of different kinds of capabilities (e.g. identifying child interests, using a responsive interaction style with their children) that are used to affect changes in a child's behavior and development. Self-efficacy is operationalized in terms of a caregiver's confidence in the ability to produce certain effects. The relationship between skills and efficacy is conceptualized as bidirectional and transactional. Self-efficacy influences an intent to affect a behavioral consequence, where the skills acquired strengthen a sense of efficacy (Sameroff and MacKenzie, 2003).

Previous research on the effectiveness of the capacity-building assessment and intervention model and practices showed that it was effective in terms of influencing child learning, behavior, and development; parents' well-being; and the provision of child learning opportunities (e.g. Dunst et al., 2001a, 2006a; Roper et al., 2005; Trivette et al., 2004). The extent to which the approach influences parents' competence and confidence was the focus of investigation described in this article. Competence was assessed in terms of increased use of an interactional style that included behaviors known to be determinants of enhanced child competence (Landry et al., 2006; Nievar and Becker, 2008; Richter, 2004). Confidence was assessed in terms of a sense of mastery and efficacy in carrying out everyday parenting tasks and roles (Bornstein et al., 2003; Primeau, 2000; Shand, 1985). We hypothesized that the capacity-building practices would positively influence family functioning and enhance caregivers' abilities to provide their children interest-based everyday natural learning opportunities.

## **Methods**

The participants were three mothers and one grandmother of four preschool-aged children with developmental delays. They were all involved in an early childhood intervention program in one southeastern state of the US. The program provided home-based services to infants, toddlers, and preschoolers, birth to eight years of age, with identified disabilities or developmental delays, and those at-risk for poor outcomes for biological or environmental reasons. The participants were selected because they were caregivers of children under four years of age, indicated their desire to learn a new approach to intervention that used child interests as a foundation for child learning, and

**Table 1.** Characteristics of caregiver study participants

Caregiver characteristics	Caregiver participants			
	Caregiver A	Caregiver B	Caregiver C	Caregiver D
Relationship to child	Mother	Grandmother	Mother	Mother
Age (years)	44	61	42	22
Education	Associate Degree	Associate Degree	11 <sup>th</sup> Grade	Associate Degree
Marital status	Living with a partner	Widowed	Married	Married
Work status	Not working	Not working	Not working	Not working

**Table 2.** Characteristics of the child participants in the study

Child characteristics	Child participants			
	Child A	Child B	Child C	Child D
Gender	Male	Female	Male	Male
Birth order	4	1	1	2
Chronological age (months)	46	40	39	17
Developmental age (months)	32	30	20	15
Developmental quotient	69	75	51	88

were willing to participate in intervention sessions at their homes every week or every other week. The number of participants was limited to four because of the study's design (a multiple baseline design across participants).

Table 1 shows the background characteristics of the caregivers. The participants varied in age from 22 to 61 years and had either an 11th grade education or two-year associate degrees. Two of the participants were married, one was living with a partner, and one was widowed. None of the participants were working outside the home.

The characteristics of the child participants are shown in Table 2. Three of the children were male and one was female. Two were first-born children, and the other two children had either one or three older siblings. The children varied in age from 17 to 46 months, and had developmental ages that ranged between 15 and 32 months (Hresko et al., 1994). The severity of the children's delays varied as determined by the differences in their developmental quotients (range = 51 to 88).

## Procedure

The participants were told that the purpose of the study was to help them provide their children interest-based everyday learning opportunities. A study investigator (J.S.) explained that the caregivers would be active participants in identifying, providing, and supporting child interest-based learning opportunities that occur or could occur as part of the family's everyday life.

The study investigator implemented the capacity-building intervention process using checklists that guided her efforts to promote caregivers' use of the everyday interest-based learning opportunities with their children. The checklists include indicators that describe what practitioners do to promote caregivers' abilities to identify child interests, select everyday activities that are contexts for interest-based child learning, increase child participation in those activities, support

and encourage child competence as part of interest-based learning opportunities, and determine the effectiveness of those learning opportunities. The interested reader is referred to Dunst et al. (2010), Dunst and Swanson (2006), Raab and Dunst (2006), Raab et al. (2006), and Swanson et al. (2006) for examples of the kinds of checklists specifically designed to strengthen family capacity to provide young children interest-based everyday natural learning opportunities.

Participants were first interviewed about their children's interests using a *Child Interest Checklist* and the everyday activities that occurred as part of family and community life using an *Everyday Learning Activity Checklist*. The interests checklist was used to ask the participants to describe the objects, people, activities, actions, and so forth that captured their children's attention, were the children's favorite things to do, were the things that got the children excited and made them smile or laugh, and so forth. The everyday activity checklist was used to ask the participants to describe the everyday family and community activities that constituted the children's life experiences (natural environments) and those activities that the participants indicated their children would find fun and interesting.

The information obtained from the interests and everyday activity assessments were used to have the participants identify those activities that would provide the children interest-based learning opportunities. For example, when a child had an interest in water, the caregiver recognized that taking a bath, playing in a creek, helping water the garden, and helping wash dishes, all provided the child opportunities to express this interest. Participants each chose eight to 10 activities which constituted the focus of intervention to increase both the number and variety of everyday, naturally occurring learning opportunities. An *Increasing Everyday Child Learning Opportunities Checklist* was used to facilitate this step in the assessment and intervention process. The kinds of activities that were selected as sources of interest-based everyday learning opportunities included a mix of family and community activities. The family activities included, but were not limited to, playing with favorite toys, reading books, playing lap games, bath time, helping in the garden, playing in the yard, and feeding the family pet. The community activities included, but were not limited to, eating out, walks and hikes, picnics, food shopping, and swimming in a nearby creek or pool.

The *Increasing Everyday Child Learning Opportunities Checklist* also was used to have the participants develop a simple plan to prompt them to engage their children in the interest-based activities on a more frequent basis. Parents used either a simple *To Do* list or a weekly schedule to remind them to provide the children as many learning opportunities as possible during the week.

Participants were shown how to use responsive teaching, an interactional strategy where caregivers reinforce children's competence and support and encourage the children to produce variations and elaborations in their behavior capabilities while they are engaged in interest-based everyday learning activities. Responsive teaching was taught by modeling the use of the instructional practice or showing the participants a video of a parent using the procedure with a child, or both. Promoting the participants' use of responsive teaching was facilitated by using a *Responsive Teaching Checklist*. Participants were asked to use the instructional practice, and the investigator who visited the participants provided feedback, guidance, and suggestions to support the caregivers' use of the practice.

Participants were visited every week or every other week to review progress, provide guidance with modifying or changing the interest-based everyday learning opportunities, describe the parenting behavior that supported and encouraged child competence, and evaluate the benefits to themselves and their children. This was facilitated using a *Parent-Mediated Child Learning Evaluation Checklist*. The checklist included indicators that were used to have the participants determine the types of child participation in interest-based everyday activities, the effectiveness of responsive teaching, the child competence displayed in the activities, and their judgments of their own capabilities to engage their children in the targeted everyday experiences. The aggregate

information was used to have the participants make changes in the methods and procedures they used to provide their children interest-based everyday learning opportunities.

All phases of the capacity-building assessment and intervention process were facilitated by using an adult learning strategy (Dunst and Trivette, 2009b) that promoted the participants' active involvement in all aspects of identifying, selecting, and engaging their children in interest-based activities; using responsive teaching to affect changes in child behavior; assessing the characteristics and consequences of the learning opportunities afforded the children; and planning and revising the intervention plans. The adult learning procedures are based on the results of a research synthesis of studies of different adult learning methods (Trivette et al., 2009a).

The capacity-building assessment and intervention process is illustrated by the following example of Caregiver B (see Table 1) and her granddaughter:

The study investigator (J.S.) worked with the grandmother, Darcy, to help her observe and identify her granddaughter's interests. Darcy identified books, playing with other children, helping her prepare meals and work in the garden, going places with her, and drawing, as some of the things her granddaughter, Summer, enjoyed most. With the help of the study investigator, Darcy selected 11 activities matching Summer's interests that she would plan to focus on. The family activities Darcy selected included looking at books together, drawing and painting, building with legos, gardening, helping with cooking, listening to music, and singing. The community activities Darcy selected included car rides, grocery shopping, attending a playgroup, and going on neighborhood walks.

The study investigator helped Darcy write a *To Do* list that reminded her of the interest-based activities she had selected. Darcy tried to let Summer do each of the activities several times a week. The study investigator also helped Darcy figure out ways to increase Summer's participation in the activities. For example, she helped Darcy involve Summer in different kinds of cooking activities, like preparing dinner, baking cookies for her mother's birthday, making biscuits for breakfast, and making pear preserves. The study investigator also helped Darcy recognize ways to increase the learning opportunities Summer had in these activities. While helping Darcy cook, Summer was provided lots of chances to do things like getting vegetables out of the refrigerator, washing vegetables, talking about the different vegetables, putting them in a pot to cook, adding water to the pot, cutting biscuits with a biscuit cutter, putting biscuits on the pan, helping wash the jars for preserves, putting ice in the glasses for dinner, and so forth.

The study investigator also helped Darcy learn to use responsive teaching strategies when interacting with Summer in the activities. She provided Darcy information about the teaching strategy, and showed her different ways she could respond to Summer in an activity. She gave Darcy opportunities to practice using the strategy and supported Darcy's learning with feedback, encouragement, and additional learning opportunities. Darcy learned to pay particular attention and respond to Summer's behavior in the activities to encourage her to do new things. For example, while they were baking biscuits, Darcy noticed that Summer particularly enjoyed putting the biscuits on the pan. Each time she saw Summer hold out her hand and say, 'more', Darcy responded with excitement, handed Summer one of the biscuits, talked about what Summer was doing, and encouraged Summer to put the biscuits on the pan, ask for another biscuit, and use simple words to describe her actions.

The study investigator helped Darcy review Summer's participation and learning in the activities on an ongoing basis. As the weeks passed, Darcy became comfortable noticing Summer's interests and providing interest-based activities. For example, she discovered how much Summer loved animals when Summer had the chance to play with puppies and kittens at a local outdoor market. Darcy also was able to plan new activities she thought would be fun and interesting to Summer. One new activity was visiting a nearby blueberry farm to pick blueberries, an activity Darcy chose because she knew how much Summer loved

gathering vegetables from the garden. Over the weeks, Darcy selected additional activities as she recognized new interests, including swimming, playing on riding toys, going to a pet store, and playing with a ball. Darcy realized that Summer was learning and doing new things in the activities, like pretending to read a book, using more words in sentences, asking questions, tapping her foot to music, pretending to play a guitar, and inviting others to do something with her. Darcy used this information to make decisions about continuing many of the activities and modifying others.

*Intervention fidelity.* The extent to which the interventions had intended effects in terms of increasing children's participation in interest-based everyday learning opportunities was determined by both the frequency of participation in the targeted activities and whether participation was characterized by interest-based features. Participants maintained daily logs of which targeted activities the children participated in, and indicated each week whether the child enjoyed himself or herself while engaged in the activities.

Over the course of 13 to 22 intervention sessions, the children participated in about 20 different activities on average. During any one week, the children participated in an average of nine to 10 different activities. The children participated in three or more of these activities between 72 percent and 88 percent of the time (mean = 83%). The percentage of the activities that the caregivers indicated were fun and enjoyable for the children ranged between 94 percent and 100 percent (mean = 98%).

### Outcome measures

Two instruments were used to measure family capacity: *Parent Behavior Rating Scale* (Dunst, 1990) and *Parenting Confidence and Efficacy Scale* (Dunst and Raab, 2002). The *Parent Behavior Rating Scale* includes five items from the *Maternal Behavior Rating Scale* (Mahoney et al., 1986) and the *Caregiver Styles of Interaction Scale* (Dunst, 2007). The *Parenting Confidence and Efficacy Scale* includes four items developed by the investigators to measure behavior related to the caregiver efficacy in completing everyday child-related parenting tasks (e.g. Bornstein et al., 1995; Haight and Miller, 1992; Laosa and Sigel, 1982). The scales were completed at the completion of home-visits to the participants as part of their involvement in the study.

*Parent Behavior Rating Scale.* This scale measures caregiver sensitivity to a child's interests, caregiver warmth toward the child, contingent responsiveness to a child's behavior, attempts to promote elaboration in a child's behavior, and parenting enjoyment. Each item is rated on a different five-point scale based on a caregiver's interactions with a child during an observation period. A principal components factor analysis of the item responses in a study conducted as part of the research reported in this article produced a single factor solution accounting for 69 percent of the variance. Coefficient alpha was .89 indicating that the scale items are measuring a homogeneous construct. The psychometric properties of the scale therefore indicated that a summated score was justified (Spector, 1992). The total scale score (sum of the five item ratings) was the dependent measure for assessing the effects of the intervention.

*Parenting Confidence and Efficacy Scale.* This scale measures caregiver effort, types of parenting strategies, emotional investment, and gratification in completing everyday parenting tasks. The everyday parenting tasks that are the focus of assessment include, but are not limited to, efforts to engage a child in play, attention to the child's safety, the ability to comfort a child, provision of child learning opportunities, etc. Each item is rated on a different five-point scale. A principal components factor analysis of the item responses in another study produced a single factor solution

accounting for 72 percent of the variance. Coefficient alpha was .86. Therefore, the sum of the four ratings was used as the dependent measure.

*Inter-rater agreement.* Inter-rater agreement was determined in two ways: first, by establishing agreement between two raters prior to the conduct of the study; second, by periodic checks throughout the conduct of the study. Inter-rater agreement was determined by dividing the total number of scale items for which there was agreement by the number of items for which there was agreement plus non-agreements multiplied by 100. Once training resulted in at least 85 percent agreement, inter-rater agreement checks thereafter resulted in 90 percent agreement on the *Parent Behavior Rating Scale* and 81 percent on the *Parenting Confidence and Efficacy Scale*.

### *Method of analysis*

A multiple baseline design across participants (Barlow and Hersen, 1984) was used to assess the effects of the interventions. This type of design is especially well-suited for evaluating the effects of interventions implemented in real-life situations because it permits experimental control over when an intervention is implemented with the study participants. A multiple baseline design includes baseline, intervention, and maintenance phases, where the outcome measures are collected in each phase. Outcome measures were collected weekly or every other week during home visits by the first author for 20 to 37 weeks. The interventions were implemented in sequence across the four participants, where the introduction of the intervention was done for each participant after the previous participant (except the first caregiver) showed a stable baseline and discernable changes in the dependent measures following the application of the intervention.

Both visual inspection of the multiple baseline graphs and the percent of non-overlapping baseline–intervention phase dependent measure scores (Scruggs and Mastropieri, 1998) were used to assess the effectiveness of the interventions. The authors each independently determined by visual inspection if the patterns of results supported the conclusion that the interventions had the hypothesized effect. The strength (size) of effect of the interventions was determined by computing the percent of dependent measures (total scale scores) that were larger during the intervention and maintenance phases compared to the baseline phase of the study for each participant.

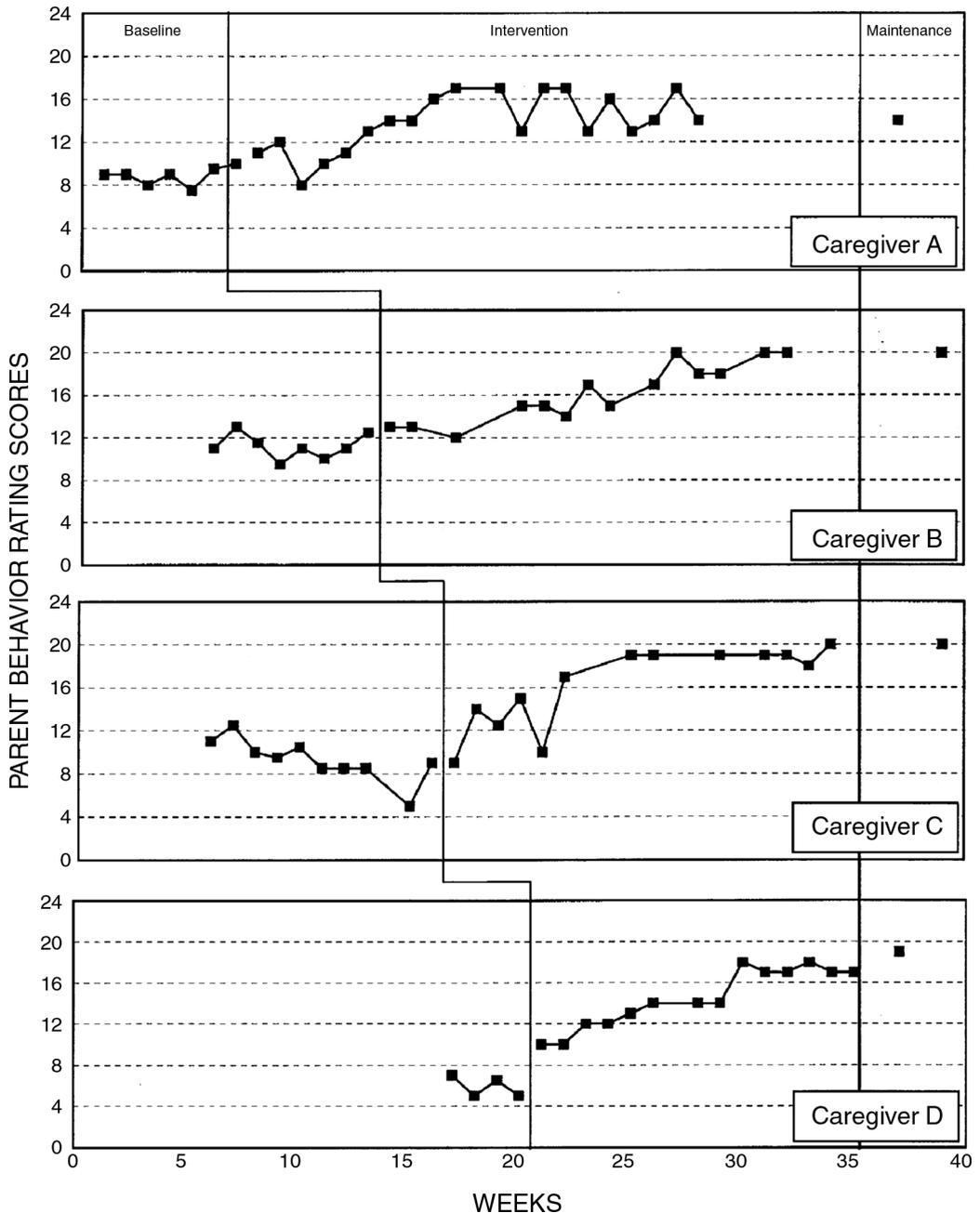
## **Results**

### *Patterns of change*

Figures 1 and 2 show, respectively, the results for the *Parent Behavior Rating* and *Parenting Confidence and Efficacy* measures. On both measures for all four participants, there were discernable changes (increases) in the dependent measures following the introduction of the interventions designed to strengthen family capacity to provide their children interest-based everyday natural learning opportunities. The effects were especially pronounced for Caregivers C and D and only slightly less pronounced for Caregivers A and B. In all cases, the interventions were associated with discernable changes on the dependent measures.

### *Sizes of effects*

Table 3 shows the percent of non-overlapping measures for each participant separately and for all four caregivers combined. For the caregivers combined, 90 percent of the intervention and maintenance phase data points did not overlap with the baseline measures. The percent of non-overlapping



**Figure 1.** Total Parent Behavior Rating Scale scores during the different phases of the study

data points for the individual study participants ranged between 87 percent and 100 percent for the *Parent Behavior Rating Scale*, and ranged between 83 percent and 100 percent for the *Parenting Confidence and Efficacy Scale*. These findings indicate that the interventions had large sizes of effects on the dependent measures.

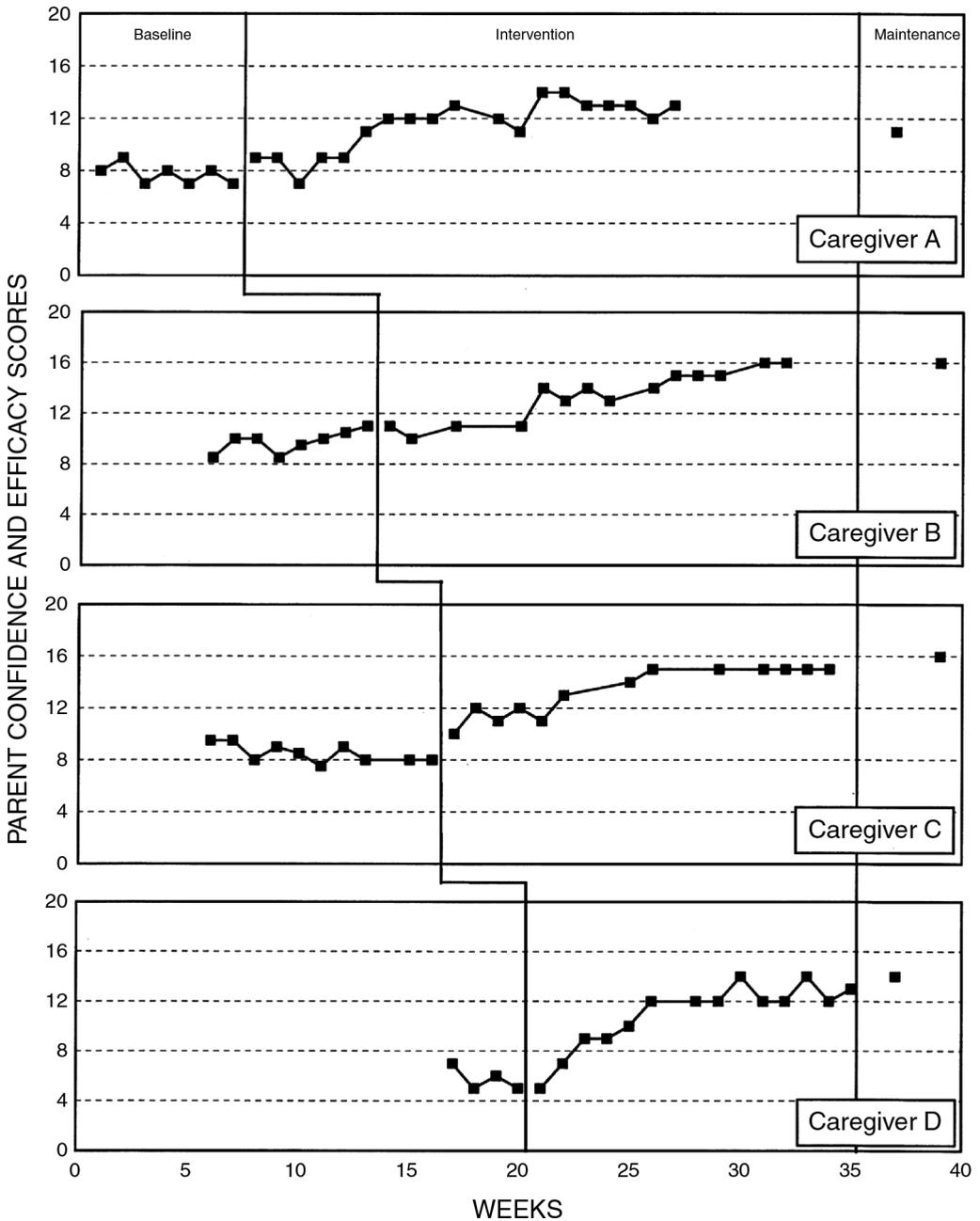


Figure 2. Total Parenting Confidence and Efficacy Scale scores during the different phases of the study

Discussion

Findings supported the hypothesis that the capacity-building intervention practices would strengthen family ability to provide their children interest-based everyday natural learning opportunities and have caregiver competency-enhancing effects. The patterns of changes and the

**Table 3.** Percent of intervention and maintenance data points that did not overlap with the baseline data points

Participants	Dependent measures	
	Parent Behavior Rating Scale	Parenting Confidence and Efficacy Scale
Caregiver A	93	89
Caregiver B	87	83
Caregiver C	88	100
Caregiver D	100	89
All caregivers combined	91	90

sizes of effect on the outcome measures indicated that caregivers' interactional behavior and their confidence (self-efficacy) were both positively influenced by the interventions for all four participants. These results were corroborated by anecdotal comments made by the caregivers, each of whom reported that the intervention helped her see her child in terms of his or her strengths and interests, view her child's abilities in a much more positive light, feel confident about using interest-based everyday activities with her child, support her child's participation in everyday activities, and encourage her child to learn new things. As one parent described, 'This study really helped me be more in tune with my child's interests and learning.' The results provide support for the contention that *how* interventions are conceptualized and implemented matter a great deal if positive consequences are to be realized (see for example, Dunst et al., 2006b). This seems to be especially the case in terms of how early childhood practitioners intervene with program participants and either promote or inhibit family capacity.

The particular approach to strengthening family capacity to provide children interest-based everyday natural learning opportunities described in this article constitutes one way of promoting caregivers' acquisition and use of knowledge and skills for enhancing child learning and development. A major premise of the approach is that the active participation of caregivers in learning and using a new or innovative practice is a necessary condition for optimizing adoption and use of the practices.

Caregiver participation was accomplished by actively involving them in identifying their children's interests, identifying the everyday activities that are the contexts for interest-based learning opportunities, increasing child participation in those activities, using responsive interactional practices to reinforce and encourage child competence, and assessing the consequences of the interventions in terms of both child and caregiver benefits (see Dunst and Swanson, 2006). There is now considerable evidence showing that participatory practices that actively involve adults in general, and parents and other caregivers in particular, in learning new knowledge and skills are related to a host of positive consequences, including improved capacity to affect changes in child learning and development (Dunst et al., 2007, 2008; Trivette et al., 2009a). Participants in this study indicated that it was particularly helpful when the study investigator explained the practices and encouraged them to ask questions to learn more information about the practices; when the investigator modeled the practices and involved them in actively observing what the practices look like; when the investigator created opportunities for the caregivers to practice using the strategies in her presence and helped them refine their use of the practices; and when the investigator helped them make decisions about strategies and activities based on what they already were doing.

The study findings have particular implications for early intervention practitioner staff development and supervision if practitioners are to acquire and use the skills necessary to work with

caregivers in a capacity-building manner. Research syntheses on adult learning methods (Trivette et al., 2009a, 2009b) suggest that practitioners' active participation in learning about and using new or innovative intervention practices is a key ingredient for strengthening practitioners' competence and confidence. Methods for promoting practitioner active participation in learning and using capacity-building early intervention practices, therefore, are very similar to the adult learning strategy used with caregivers in this study. The strategy involves: a) introducing information about the model and model practices, b) illustrating the practice by example (e.g. demonstrating, using video examples), c) engaging the learner in implementing the practice, d) involving the learner in assessing the use and outcomes of the practice, e) assessing learner mastery, and f) determining the next steps for promoting the learner's understanding and use of the practices (Dunst and Trivette, 2009b).

Several remarks about our definition of family capacity deserve comment to place our definition in perspective. The definition of family capacity provided in the introduction to this article includes both behavior and efficacy elements because there is considerable evidence that a belief that one can produce a desired effect influences the likelihood that one will execute a course of action to affect desired changes (Bandura, 1997; Skinner, 1995). Research also indicates that participatory help giving practices influence caregivers' self-efficacy beliefs about control over important life events (Dunst et al., 2007). Advances in our understanding of the relationships between capacity-building help giving practices and parenting capabilities and behaviors now indicates that the strength of this relationship is mediated by self-efficacy beliefs (Dunst et al., 2006b, 2008).

The term family-capacity can be found extensively in the early childhood intervention literature but for the most part, has not been well defined or defined at all (see Bailey et al., 1998, for an exception). Operational definitions are important because they 'specify precisely how a concept will be measured' (Babbie, 2004: 125). The ways in which we defined family capacity are among several ways that the construct can be defined. What we were able to discern was the fact that several dimensions of family capacity were influenced by the ways in which the intervention constituting the focus of investigation was conceptualized and implemented.

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## References

- Adams C (2003) Relationship of early intervention service coordination model to quality of transition and family empowerment. *Dissertation Abstracts International* 64(08): 4081B (UMI No. 3103705).
- Babbie E (2004) *The Practice of Social Research*. Belmont, CA: Wadsworth.
- Bailey D, Scarborough A, Hebbeler K, Spiker D, and Mallik S (2004) *National Early Intervention Longitudinal Study: Family Outcomes at the End of Early Intervention*. Menlo Park, CA: SRI International. Available at: [http://www.sri.com/neils/pdfs/FamilyOutcomesReport\\_011405.pdf](http://www.sri.com/neils/pdfs/FamilyOutcomesReport_011405.pdf) (accessed 19 January 2006).
- Bailey DB, Jr, McWilliam RA, Darkes LA, Hebbeler K, Simeonsson RJ, Spiker D, and Wagner M (1998) Family outcomes in early intervention: A framework for program evaluation and efficacy research. *Exceptional Children* 64: 313–328.
- Bandura A (1997) *Self-efficacy: The Exercise of Control*. New York: Freeman.
- Barlow DH, Hersen M (1984) *Single Case Experimental Designs: Strategies for Studying Behavior Change*. New York: Pergamon Press.

- Bornstein MH, Hendricks C, Hahn C-S, Haynes OM, Painter KM, and Tamis-Lemonda CS (2003) Contributors to self-perceived competence, satisfaction, investment, and role balance in maternal parenting: A multivariate ecological analysis. *Parenting* 3: 285–326.
- Bornstein MH, Maital SL, Tal J, and Baras R (1995) Mother and infant activity and interaction in Israel and in the United States: A comparative study. *International Journal of Behavioral Development* 18: 63–82.
- Campbell PH, Sawyer LB (2009) Changing early intervention providers' home visiting skills through participation in professional development. *Topics in Early Childhood Special Education* 28: 219–234.
- Carpenter B (1997) Empowering parents: The use of the parent as researcher paradigm in early intervention. *Journal of Child and Family Studies* 6: 391–398.
- Dunst CJ (1990) *Parent Behavior Rating Scale (Winterberry Assessment Scales and Instruments)*. Asheville, NC: Winterberry Press.
- Dunst CJ (2006) Parent-mediated everyday child learning opportunities: I. Foundations and operationalization. *CASEinPoint* 2(2): 1–10. Available at: [http://www.fippcase.org/caseinpoint/caseinpoint\\_vol2\\_no2.pdf](http://www.fippcase.org/caseinpoint/caseinpoint_vol2_no2.pdf).
- Dunst CJ (2007) *Caregiver Styles of Interaction Scales: Revised and Updated*. Asheville, NC: Winterberry Press.
- Dunst CJ, Bruder MB, Trivette CM, and Hamby DW (2006a) Everyday activity settings, natural learning environments, and early intervention practices. *Journal of Policy and Practice in Intellectual Disabilities* 3: 3–10.
- Dunst CJ, Bruder MB, Trivette CM, Hamby D, Raab M, and Mclean M (2001a) Characteristics and consequences of everyday natural learning opportunities. *Topics in Early Childhood Special Education* 21: 68–92.
- Dunst CJ, Bruder MB, Trivette CM, Raab M, and Mclean M (2001b) Natural learning opportunities for infants, toddlers, and preschoolers. *Young Exceptional Children* 4(3): 18–25.
- Dunst CJ, Raab M (2002) Parenting competence and competence scale. Unpublished instrument, Orelena Hawks Puckett Institute, Asheville, NC.
- Dunst CJ, Raab M, Trivette CM, and Swanson J (2010) Community-based everyday child learning opportunities. In: McWilliam RA (ed.) *Working with Families of Young Children with Special Needs*. New York: Guilford Press.
- Dunst CJ, Swanson J (2006) Parent-mediated everyday child learning opportunities: II. Methods and procedures. *CASEinPoint* 2(11): 1–19. Available at: [http://www.fippcase.org/caseinpoint/caseinpoint\\_vol2\\_no11.pdf](http://www.fippcase.org/caseinpoint/caseinpoint_vol2_no11.pdf).
- Dunst CJ, Trivette CM (2009a) Capacity-building family systems intervention practices. *Journal of Family Social Work* 12: 119–143.
- Dunst CJ, Trivette CM (2009b) Let's be PALS: An evidence-based approach to professional development. *Infants and Young Children* 22: 164–175.
- Dunst CJ, Trivette CM, and Hamby DW (2006b) *Family Support Program Quality and Parent, Family and Child Benefits*. Asheville, NC: Winterberry Press.
- Dunst CJ, Trivette CM, and Hamby DW (2007) Meta-analysis of family-centered helping practices research. *Mental Retardation and Developmental Disabilities Research Reviews* 13: 370–378.
- Dunst CJ, Trivette CM, and Hamby DW (2008) *Research Synthesis and Meta-analysis of Studies of Family-centered Practices*. Asheville, NC: Winterberry Press.
- Dunst CJ, Trivette CM, Humphries T, Raab M, and Roper N (2001c) Contrasting approaches to natural learning environment interventions. *Infants and Young Children* 14(2): 48–63.
- Everts J, Essa EL, and Reilly J (1992) Parent empowerment through early childhood programs. *Family Science Review* 5: 97–109.
- Guimond AB, Wilcox MJ, and Lamorey SG (2008) The Early Intervention Parenting Self-Efficacy Scale (EIPSES): Scale construction and initial psychometric evidence. *Journal of Early Intervention* 30: 295–320.
- Haight W, Miller PJ (1992) The development of everyday pretend play: A longitudinal study of mothers' participation. *Merrill-Palmer Quarterly* 38: 331–349.

- Hebbeler KM, Gerlach-Downie SG (2002) Inside the black box of home visiting: A qualitative analysis of why intended outcomes were not achieved. *Early Childhood Research Quarterly* 17: 28–51.
- Hresko W, Miguel S, Sherbenou R, and Burton S (1994) *Developmental Observation Checklist System: A Systems Approach to Assessing Very Young Children: Examiner's Manual*. Austin, TX: Pro-Ed.
- Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. §1400 et seq. (2004).
- Landry SH, Smith KE, and Swank PR (2006) Responsive parenting: Establishing early foundations for social, communication, and independent problem-solving skills. *Developmental Psychology* 42: 627–642.
- Laosa LM, Sigel IE (1982) *Families as Learning Environments for Children*. New York: Plenum Press.
- Mahoney G, Powell A, and Finger I (1986) The Maternal Behavior Rating Scale. *Topics in Early Childhood Special Education* 6(2): 44–55.
- Mahoney G, Wiggers B (2007) The role of parents in early intervention: Implications for social work. *Children and Schools* 29(1): 7–15.
- McBride SL, Peterson C (1997) Home-based early intervention with families of children with disabilities: Who is doing what? *Topics in Early Childhood Special Education* 17: 209–233.
- Morawska A, Sanders MR (2006) Self-administered behavioral family intervention for parents of toddlers: Part. I. Efficacy. *Journal of Consulting and Clinical Psychology* 74: 10–19.
- Nievar MA, Becker BJ (2008) Sensitivity as a privileged predictor of attachment: A second perspective on De Wolff and van IJzendoorn's meta-analysis. *Social Development* 17: 102–114.
- Primeau L (2000) Divisions of household work, routines, and child care occupations in families. *Journal of Occupational Science* 7: 19–28.
- Raab M, Dunst CJ (2006) Checklists for promoting parent-mediated everyday child learning opportunities. *CASEtools* 2(1): 1–9. Available at: [http://www.fippcase.org/casetools/casetools\\_vol2\\_no1.pdf](http://www.fippcase.org/casetools/casetools_vol2_no1.pdf).
- Raab M, Swanson J, Roper N, and Dunst CJ (2006) Promoting parent and practitioner identification of interest-based everyday child learning opportunities. *CASEtools* 2(6): 1–19. Available at: [http://www.fippcase.org/casetools/casetools\\_vol2\\_no6.pdf](http://www.fippcase.org/casetools/casetools_vol2_no6.pdf).
- Reeves SL (2003) Maternal perceptions: The change process during participation in an early intervention program. *Dissertation Abstracts International* 63(12): 6104B.
- Reynolds D (2003) Mindful parenting: A group approach to enhancing reflective capacity in parents and infants. *Journal of Child Psychotherapy* 29: 357–374.
- Richter L (2004) *The Importance of Caregiver-Child Interactions for the Survival and Healthy Development of Young Children: A Review*. Geneva, Switzerland: World Health Organization, Department of Child and Adolescent Health and Development.
- Rodger S, Keen D, Braithwaite M, and Cook S (2008) Mothers' satisfaction with a home based early intervention programme for children with ASD. *Journal of Applied Research in Intellectual Disabilities* 21: 174–182.
- Roper N, Iauch L, and Gurley C (2005) Language learning in children exhibiting characteristics of apraxia using contextually mediated practices. *CASEinPoint* 1(3): 1–5. Available at: [http://www.fippcase.org/caseinpoint/caseinpoint\\_vol1\\_no3.pdf](http://www.fippcase.org/caseinpoint/caseinpoint_vol1_no3.pdf).
- Sameroff AJ, MacKenzie MJ (2003) Research strategies for capturing transactional models of development: The limits of the possible. *Development and Psychopathology* 15: 613–640.
- Scruggs TE, Mastropieri MA (1998) Summarizing single-subject research: Issues and applications. *Behavior Modification* 22: 221–242.
- Shand N (1985) Culture's influence in Japanese and American maternal role perception and confidence. *Psychiatry: Journal for the Study of Interpersonal Processes* 48: 52–67.
- Shannon P (2004) Barriers to family-centered services for infants and toddlers with developmental delays. *Social Work* 49: 301–308.

- Skinner EA (1995) *Perceived Control, Motivation, and Coping*. Thousand Oaks, CA: SAGE.
- Spector PE (1992) *Summated Rating Scale Construction: An Introduction*. Newbury Park, CA: SAGE.
- Swanson J, Raab M, Roper N, and Dunst CJ (2006) Promoting young children's participation in interest-based everyday learning activities. *CASEtools* 2(5): 1–22. Available at: [http://www.fippcase.org/casetools/casetools\\_vol2\\_no5.pdf](http://www.fippcase.org/casetools/casetools_vol2_no5.pdf).
- Trivette CM, Dunst CJ, and Hamby D (2004) Sources of variation in and consequences of everyday activity settings on child and parenting functioning. *Perspectives in Education* 22(2): 17–35.
- Trivette CM, Dunst CJ, Hamby DW, and O'Herin CE (2009a) *Characteristics and Consequences of Adult Learning Methods and Strategies*. Asheville, NC: Winterberry Press.
- Trivette CM, Dunst CJ, Hamby DW, and O'Herin CE (2009b) Characteristics and consequences of adult learning methods and strategies. *Practical Evaluation Reports* 2(1): 1–32. Available at: [http://www.practicalevaluation.org/reports/CPE\\_Report\\_Vol2No1.pdf](http://www.practicalevaluation.org/reports/CPE_Report_Vol2No1.pdf).