

# Journal of Early Intervention

<http://jei.sagepub.com/>

---

## Supporting Learning Opportunities in Natural Settings Through Participation-Based Services

Philippa H. Campbell and L. Brook Sawyer  
*Journal of Early Intervention* 2007 29: 287  
DOI: 10.1177/105381510702900402

The online version of this article can be found at:  
<http://jei.sagepub.com/content/29/4/287>

---

Published by:



<http://www.sagepublications.com>

On behalf of:



Division for Early Childhood of the Council for Exceptional Children

**Additional services and information for *Journal of Early Intervention* can be found at:**

**Email Alerts:** <http://jei.sagepub.com/cgi/alerts>

**Subscriptions:** <http://jei.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations:** <http://jei.sagepub.com/content/29/4/287.refs.html>

REGULAR ARTICLE

# *Supporting Learning Opportunities in Natural Settings Through Participation-Based Services*

**PHILIPPA H. CAMPBELL AND L. BROOK SAWYER**

*Thomas Jefferson University*

*Recommended early intervention practices emphasize family-centered approaches provided within natural settings through interventionist interactions with caregivers. We defined this approach as participation-based and used the Home Visiting Observation Form (HVOF) and the Natural Environments Rating Scale (NERS) to describe 50 home visits and to examine the extent to which participation-based services could be identified and distinguished from traditional services. A minority of the sample visits were described as participation-based although participation-based services were clearly distinguishable from traditionally provided services. Interventionists using participation-based approaches interacted with the caregiver-child dyad and caregivers were actively involved with their children during the session. Results from the study suggest the NERS can be used to describe characteristics of participation-based services and holds promise as a measure that might be used by interventionists, their supervisors, or by researchers to measure intervention fidelity during home visits.*

Home visits have become a primary method for early intervention birth to 3 service provision. The home as a location for early intervention services evolved as states addressed the Part C natural environments requirement and defined natural environments as a location where services occur. Although IDEA regulations broadly define natural environments as "those settings that are natural or normal for the child's age peers who have no disabilities" (34 CFR 303.18), homes came to be viewed as the default natural environment for Part C. In 1993, 47% of infant-toddlers received early intervention services in the home. By 1997, this percent had increased to 59% and by 2004, to 83% (U.S. Department of Education, Office of Special Education Programs, 2003; 2004).

Even though a majority of infants and toddlers receive their early intervention services at home, concerns have been expressed about the extent to which those services are any different than what therapists, teachers, or other early intervention specialists traditionally have provided in a center or clinic (McWilliam, 2000). Traditional service models generally are child-focused, oriented to children's developmental or physical needs, and include the following components: a) areas of concern, generally expressed as developmental skill outcomes or goals; b) planned methods, strategies, or approaches to be used to address the areas of concern; and c) progress monitoring or measurement. In traditional services, the interventionist plans activities that provide

a context in which the child can learn or practice targeted skills and works directly with the child to provide learning opportunities. Home programs might be designed for caregivers to work on targeted outcomes between intervention visits (Dunst, Trivette, Humphries, Raab, & Roper, 2001).

Alternatives to the traditional approach have been offered and attempts have been made to rethink and define practice in natural environments (Chai, Zhang, & Bisberg, 2006). A conceptual model for implementation of intervention in natural settings (e.g., home and community) has been described by Stremel and Campbell (2007) who defined nine components of practice in natural settings by summarizing recommended practices reported in the literature. The identified components are broad-based and include practices such as interaction with families, assessment, intervention, and progress monitoring, all of which should be present when practitioners work with infants and toddlers and their families. The behaviors and practices of early interventionists when providing intervention in natural settings has been described and labeled as *participation-based*, given that a primary purpose of intervention in natural settings is to promote children's participatory learning opportunities and to teach caregivers to use effective strategies in their interactions with their children (Campbell, 2004).

One assumption underlying the participation-based approach is that services will be incorporated into a family's daily routines and activities. The importance of providing early intervention services within activities and routines has been emphasized through the development of specific curricula or procedures such as routines-based intervention (McWilliam & Scott, 2001), family guided routines-based intervention (Cripe, Hanline, & Daley, 1997; Woods, Kashinath, & Goldstein, 2004), activity-based intervention (Pretti-Frontczak & Bricker, 2004; Valvano, 2004), learning opportunities (e.g., Dunst, 2000, 2001; Dunst & Bruder, 1999; Dunst, Bruder, Trivette, Raab, & McLean, 2001; Dunst, Hamby, Trivette, Raab, &

Bruder, 2000; Dunst, Herter, & Shields, 2000), or the more recently labeled model of early intervention in natural environments (EINE; McWilliam, 2005). Although each of these approaches define key features somewhat differently, they share a common focus on both the identification and use of activities and routines as contexts for teaching and learning and on an interventionist role of supporting and teaching families (Chai et al., 2006; Edelman, 2004). While many of the approaches include specific forms for interventionists to use to plan interventions (e.g., Dunst, Bruder, Trivette, Hamby, et al., 2001; McWilliam, 2005; Woods, 2005) or suggest general home visiting strategies (Axtmann & Dettwiler, 2005; Klass, 2003; Wasik, Bryant, & Lyons, 1990), to date, none of these advocated approaches clearly delineate exactly what an interventionist should do when visiting a child and family in their home or other natural setting. In the absence of descriptions of what interventionists should do, it is difficult to either examine intervention fidelity or its relationship to child and family outcomes.

### *Describing Home Visits*

The Home Visit Observation Form (HVOF; McBride & Peterson, 1997) was designed to describe and quantify what early interventionists do during home visits. The form records interaction partners (who is in the interaction), content of the interaction (what is occurring during the visit), and the role of the home interventionist. In the initial use of this scale, the authors asserted that if family-centered services were being provided, a minority of the interactions would be between only the interventionist and child, the visit content would reflect a variety of areas with a minority of time spent solely on children's skill development, and a minority of time would be spent by the interventionist in direct teaching of the child. When used with a sample that consisted of 15 early interventionists and 28 children/families, with data collected across three home visits for each interventionist/child/family triad, results showed the visits did not reflect the principles identified by the

authors as reflective of a family-centered approach. Primarily, providers interacted with children and the content of a majority of the visits focused almost entirely on child development. The providers spent more than half their time in direct teaching with children.

Two additional studies of early intervention home visits have been conducted and both have used modifications of the original HVOF. Early intervention home visits were compared with visits made by two types of Early Head Start workers (i.e., child development specialists and family development specialists; Peterson, Luze, Eshbaugh, Jeon, & Kantz, 2007). In the early intervention provider group ( $n = 15$ ), almost half of the interactions involved only the interventionist and child, with content focused almost exclusively on the child's development. The interventionists spent more than half their time instructing the child. Results were similar in a second study where three visits of 83 early interventionists who had and had not received relationship-based training were compared using a modification of the original HVOF. In this study, a fourth category was added to the HVOF to describe the role of the caregiver (Wilcox & Lamorey, 2004; Wilcox, Campbell, & Lamorey, 2006). A majority of interactions for both groups of early interventionists were classified as including the interventionist-caregiver-child. The primary caregiver's role, however, was to watch or not interact with the child or interventionist; caregivers interacted with children less than 20% of the visit time. Interventionists spent over half of their time directing the child.

### ***A Framework for Participation-Based Home Visits***

Using reports from the literature, features of traditional and participation-based services were contrasted using six dimensions: location, focus, purpose, activity, role of the interventionist, and role of the caregiver. As shown in Table 1, the location where services are provided is not a distinguishing feature between these two types of service provision

approaches. There are, however, critical differences in the focus of each approach, although early interventionists might translate these concepts differently in practice. For example, early interventionists report that they are focusing on the family and doing what the family wants them to do when they come into a home and provide direct one-on-one services to children (Hanson & Bruder, 2001). Furthermore, practitioners' understanding of working with families often means that families should "get down on the floor" and watch what practitioners do when they are working with children so the caregiver will be able to follow-through between sessions (Campbell & Halbert, 2002). Because terms such as *family-centered* or *natural environments* mean different things to different individuals, we further defined the focus of services by purpose, activity, and role dimensions.

Broadly speaking, the purpose of both participation-based and traditional services is to provide intervention for a child. The intervention is translated differently, however, in the activities used for intervention and in the roles of the interventionist and caregiver. In participation-based services, the interventionist uses naturally occurring routines (e.g., mealtimes) or activities (e.g., playing on a playground; riding in the car; shopping) to provide children's learning opportunities. In traditional services, an interventionist designs activities to provide specific learning opportunities (e.g., playing with particular toys to encourage manipulation). When interventionists create activities to provide specific learning opportunities, they generally select materials needed to engage in the activity, which might result in interventionists bringing special materials into the home (Washington, Schwartz, & Swinth, 1994). In participation-based services, the caregiver interacts directly with the child while the interventionist supports, teaches, or coaches. In traditional services, the interventionist interacts directly with the child and the caregiver is either not present or observes (mostly passively) what the interventionist is doing.

**Table 1****Comparison of Participation-Based Versus Traditional Interventions**

Feature	Participation-Based Services	Traditional Services
Location	Home, childcare program, or other community setting	Home, childcare program, or other community setting.
Focus	Family-centered; oriented to caregiver-child dyad.	Child-focused; oriented to child.
Purpose	Provide intervention service (e.g., teaching, therapy) in order to (a) maximize participatory learning opportunities through full participation in an existing activity or routine; (b) promote child competence and mastery by maximizing learning opportunities within the context of naturally-occurring activities and routines; or (c) address specific needs related to child's disability.	Provide intervention service (e.g., teaching, therapy) in order to assist a child to (a) learn a skill identified on the basis of a concern or need; or (b) address specific needs related to a child's disability.
Activity	Activities and routines in which the child/family participate (e.g., family, community, & early childhood program activity settings) are used as a context for participatory learning opportunities. Strategies include responsive teaching and adaptations/assistive technology to promote participatory learning opportunities using materials that are typical to the activity setting.	Interventionist (e.g., teacher, therapist) designs activity that will provide opportunities for a child to learn or perform desired skills and implements the activity with the child using materials needed for the activity. Strategies include specialized teaching and therapeutic interventions to promote use of desired skills within the planned activity.
Interventionist role	Interacts with and engages the caregiver; supports the caregiver in interacting with the child and using strategies (interventions) that will promote participatory learning opportunities and practice of desired skills within the context of family activities & routines (e.g., activity settings); designs, fabricates, or helps family acquire adaptations, including low-to-high assistive technology devices.  Interventionist is a consultant or coach to the family, using strategies such as facilitation, coaching, modeling, guidance, etc. to promote the caregiver's success with the child.	Interacts directly with child, or with child and caregiver together, engaging the child in the specially-designed activity so that the child can have opportunities to learn or practice a desired skill.  Interventionist is a direct interventionist, providing hands-on intervention with the child.
Caregiver role	Interacts directly with the child with the facilitation and support of the interventionist	Observer of what the interventionist is doing with the child; might practice implementing the same strategies with the interventionist present to support caregiver

Given the promise of the HVOF measure for describing what occurs during home visits and a framework for distinguishing participation-based versus traditional home visiting approaches, the present study had two major purposes: (a) to describe characteristics of early intervention home visits and (b) to determine the extent to which participation-based and traditional services could be distinguished by key characteristics using the HVOF and an investigator-developed rating scale. We hypothesized that early interventionists could be working within a natural setting (e.g., the home) but be providing either the same type of service (i.e., traditional) as would be provided in another setting (i.e., clinic or center) or a type of service where family activities and routines provided a context for intervention (i.e., participation-based). Because traditional services are reported in the literature as a predominant service model, we hypothesized that a majority of the visits would be classified as traditional and that interventionist characteristics such as discipline, years of experience, or number of children/families with whom an interventionist was working (e.g., caseload) would not be related to the type of service provided.

## METHOD

### Participants

The sample of convenience for the present study was 50 early interventionists from a variety of disciplines (e.g., teachers and therapists) who provided Part C services in a northeastern state. All participants submitted to the investigators a videotape that showed a typical intervention activity with a child and family they served. Table 2 shows the demographic information for the study sample. A majority of the interventionists were female and Caucasian, although individuals with other ethnic backgrounds made up 28% of the sample. Teachers (27%) constituted the largest percent of interventionists; occupational therapists, physical therapists, and speech-language pathologists comprised 15% to 24% of the study sample.

Interventionists had an average age of 36.5 years and averaged more than 8 years experience in their disciplines (range <1 to 24 years) and 3 years of experience in early intervention (range <1 to 17 years).

The majority of children served by these interventionists were male. Approximately two-third were Caucasian, one-fifth were African American, and the remaining children were Latino. Almost half of the children were between 12 and 24 months of age; the remainder were between 25 and 36 months. No children included in the sample were younger than 12 months. Approximately one-third of the children had speech delays only, one-third had motor disabilities, and the remaining were classified as having multiple disabilities (e.g., blind with physical disability), developmental delay, pervasive developmental disorder or autism, or other concerns (e.g., nutritional problems).

### Measures

We rated each of the 50 videotapes with two scales to describe what occurred during the home visits. Each tape was rated first with the *Natural Environments Rating Scale* (NERS; Campbell & Sawyer, 2004; Appendix A) and then with a modified version of the *Home Visit Observation Form-Modified* (HVOF-M; Wilcox & Lamorey, 2004).

*Natural Environments Rating Scale* (NERS). We developed the NERS to summarize home visit activities focused on child learning. Ratings were made following viewing of a videotaped visit between an interventionist and the family/child. The first NERS category rated was setting. Setting was noted to identify situations where interventionists worked with families and children in settings outside the home. More than one setting could be represented on the tape and counted. Because the NERS was designed to be used to rate implementation of child-focused interventions, activity was used to identify broadly the situation(s) occurring on the tape. If the focus of the visit was not on a child-focused activity (e.g., interventionist and caregiver were having a discussion), use of the NERS was discontinued. When the

**Table 2**  
*Early Interventionist Characteristics*

	All Participants % n = 50	Traditional % n = 35	Participation-Based % n = 15
<b>Degree area</b>			
OT	24.4	21.4	30.8
PT	17.1	17.9	15.4
SLP	14.6	10.7	23.1
Education	26.8	32.1	23.1
Psychology or Social Work	7.3	10.7	0
Other	9.8	10.7	7.7
<b>Gender</b>			
Male	4.1	2.9	6.7
Female	95.9	97.1	93.3
<b>Ethnicity</b>			
Caucasian	72.3	63.6	92.9
African American	19.1	24.2	7.1
Latino/Hispanic	4.3	6.1	0
Asian	2.1	3.0	0
Other	2.1	3.0	0
<b>Education</b>			
High school diploma	2.3	0	7.1
Bachelor's degree	43.2	46.7	35.7
Master's degree	54.5	53.3	57.1
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Age in years	36.47 (10.60)	36.52(10.66)	36.36 (10.96)
Years of interventionist experience	8.65 (8.57)	9.20 (8.75)	7.38 (8.38)
Years of experience in early intervention	3.10 (3.82)	3.21 (3.59)	2.89 (4.36)

*Note.* OT = occupational therapist; PT = physical therapist; SLP = speech and language pathologist.

rater determined the session included a child-focused intervention, six additional categories were rated on the NERS: (a) type of activity; (b) engagement of child; (c) leader of activity; (d) materials; (e) role of caregiver; and (f) role of home visitor (see Appendix). Type of activity further specified the purpose(s) of the intervention activity (e.g., socialization, motor skills). More than one type of activity could be represented on the tape and counted. Engagement of child was rated on a 3-point scale ranging from *not engaged* (1) to *very engaged* (3).

The characterization of the session as traditional or participation-based resulted from scores obtained on the remaining four categories: leader of activity, materials, role

of caregiver, and role of home visitor. These four categories were used to represent dimensions that differentiated the two types of services. Leader of the activity referred to whether the activity was a child-directed or adult-directed activity and identified the adult (e.g., interventionist or caregiver) who was directing the activity. Because activities that are planned and directed by an early interventionist might be de-contextualized from the child's activities and routines and require use of specialized materials (e.g., particular toys or therapy equipment), we rated whether the materials used during the activity would be naturally available in the setting. The last two categories identified roles for the interventionist (i.e., observing,

directing, or facilitating) and the caregiver (i.e., not present, observing, or directly involved).

The four categories were scored by assigning a value of 1 to each characteristic of a participation-based visit (see Appendix A for coding values). In the role of the interventionist, however, a midpoint value of 0.5 was assigned to the category of active observer because active observer includes some interaction with the caregiver but not the extent of interaction required to be coded as facilitator, a role that is a characteristic of a participation-based approach. Videotapes with values totaling 2 points or less were coded as traditional, and those with scores of 2.5 points or greater were labeled as participation-based. In the present study, the primary purpose of the NERS was to differentiate between traditional or participation-based approaches based on the four key dimensions. These two approaches were viewed as dichotomous, rather than continuous. Characterizations of activities viewed on the videotapes as participation-based or traditional were based on ratings associated with four inter-related categories: leader of activity, materials, role of caregiver, and role of home visitor.

*Home Visit Observation Form-Modified (HVOF-M).* The original HVOF form (McBride & Peterson, 1997) was designed to be completed by a rater who is present during the entire home visit. The original form contained three major coding categories: *interaction partners, content of the interaction, and role of the home visitor.* In this study, a modified version of the HVOF was used (i.e., HVOF-M). The HVOF-M is an observational coding instrument, which is scored while viewing a videotape of a home visit. For the modified version, a fourth category was included, with codes that specified the *role of the caregiver* (Wilcox & Lamorey, 2004). Each of the four categories included multiple codes to allow recording of a wide variety of situations. For example, *interaction partners* included various combinations of child, parent, home visitor, and other participants. *Content of the interaction*

included such activities as discussion of various topics (e.g., child's progress, child's services, family issues), explanations by interventionists to parents about goals and activities, and play with the child (i.e., child-focused activity). *Role of the home visitor* generally consisted of home visitor working directly with the child, supporting the family's actions with the child, or having a discussion with the family. *Role of the parent* included such actions as working with the child, watching the interventionist work with the child, or engaging in discussion with the home visitor. (The HVOF-M can be obtained from the first author upon request).

### **Procedures**

Early intervention service providers completed a two-session self study professional development workshop where they learned about providing intervention within natural environments. Providers were given written materials, such as an assessment of family routines and activities, to use in their work with children and families. They subsequently attended a second session where they submitted written materials and a videotape of themselves implementing a "typical" activity in the context of a home visit with a self-selected family. Interventionists were asked to obtain and submit a videotape that was focused on an intervention activity with a child (versus a family discussion) of approximately 20 min in length. Submitted videotapes varied in length from 5 to 80 min ( $M = 22.5$ ;  $SD = 15.6$ ). Shorter tapes generally consisted of one specific child-focused activity (e.g., practicing using hand-over-hand feeding technique), whereas longer tapes contained multiple child-focused activities or contained a child-focused activity and other components, such as family discussion.

*Scoring the Natural Environments Rating Scale (NERS).* A staff researcher watched each videotape in its entirety and then rated the setting and activity categories of the NERS. If the tape contained a child-focused activity (or activities), then the remaining NERS categories (i.e., type of activity, child



engagement, leader of activity, materials, role of caregiver, and role of home visitor) were rated based on the activities. Descriptive analyses (i.e., frequency counts, percentages) were conducted for seven of the eight NERS categories for each of the service classifications (i.e., participation-based or traditional). The excluded category was *activity* because this category was used to verify that an activity involving the child was occurring and that the NERS could be used to rate the videotaped visit.

Approximately 20% (11 of 50) of the videotapes were randomly selected and coded by a second staff researcher to determine interobserver agreement. The number of NERS categories for which the two coders demonstrated agreement was summed, divided by the total number of categories, and multiplied by 100. We calculated interrater agreement for all eight categories and for the four categories that were used to determine whether the videotape activity was participation-based or traditional. Overall, the two observers demonstrated a mean percent agreement of 86% for the eight categories and 89% agreement for the four categories.

*Scoring the Home Visiting Observation Form-Modified (HVOF-M).* Each of the four HVOF-M categories were rated using codes representing each category at 30 sec intervals. Within each of the four coding categories, if more than one rating could be applied during a 30-sec interval, the behavior that occurred for the predominant amount of time was rated. For example, if the interventionist was providing sensitive direction for 20 sec (of the 30-sec interval) and was providing sensitive facilitation for 10 sec, the *role of the interventionist* was scored as *sensitive direction* for that interval. Because length of the videotapes varied, we calculated the percent of intervals in which each code occurred. For example, 75% in sensitive direction represented a situation where the interventionist was coded as providing sensitive direction during 75% of the rating intervals.

Coding began when the videotaped child-focused activity started; if the videotape

began with the camera being set-up or other non-child focused intervention, we delayed coding until the intervention activity started. Coding continued until the end of the videotape or until 40 intervals (i.e., 20 min) elapsed. Twenty min was judged as sufficient duration for filming one or two child-focused activities; videotapes longer than 20 min generally contained periods of nonchild-focused activities (e.g., family discussion, camera set-up). Tapes under 20 min included one child-focused activity generally occurring with an infant or younger child. Thirty percent of the tapes were analyzed for 40 intervals (20 min), 28% for 30–39 intervals (15–19.5 min), 22% for 20–29 intervals (10–14.5 min), and 20% for fewer than 20 intervals (5–9.5 min).

Additional codes were used to represent issues related to technical problems or lack of interaction. A code of *technical problem* was used to define problems with videotaping (e.g., the camera was pointing toward the floor for the majority of the interval). Any intervals in which the primary code was *technical problem* were dropped before percent interval data were calculated. A second code, *no interaction*, was used across all categories and this code reflected no interactions occurring among any of the participants during the interval. In categories of *role of the home visitor* or *role of the caregiver*, an additional code was used to reflect *no interaction of the specific individual being rated* (e.g., no interaction of the home visitor with either the child or caregiver because the home visitor was engaged in another activity such as writing notes). All codes were used to rate each videotape. Similar codes were combined within each category to reduce the number of codes used in the analyses (see Table 3). For example, intervals coded as *no interaction* were combined intervals coded as *transition*, a code used to rate transitions between activities. Descriptive analyses (i.e., means, ranges, standard deviations) were computed for the combined codes for the HVOF.

Approximately 30% (16 of 50) of the videotapes were coded by a second research

**Table 3**  
**Final Rating Categories for the Modified HVOF<sup>1</sup>**

Rating Category	Final (Combined) Codes
Interaction partners	Includes caregiver and child without the home visitor; sibling or other adult also might be part of the interaction Includes the home visitor and child without the caregiver; sibling or other adult also might be part of the interaction Includes caregiver, home visitor, and child; sibling or other adult also might be included Other combinations
Content of the interaction	No interaction Discussion regarding child's development or progress Play activity Discussion related to explanations to the caregiver Other discussion Other content
Home visitor role	No interaction/transition Sensitive direction Sensitive facilitation Conversation with caregiver Supportive interaction Observing Not involved in interaction or providing insensitive interaction Other
Caregiver role	No interaction/transition Interacting with child Watching home visitor/child dyad Conversation with home visitor Not involved in the interaction Other No interaction/transition

*Note.* HVOF = Home Visiting Observation Form; <sup>1</sup> = Table 3 represents the collapsed codes for the modified HVOF. For information on the complete list of codes, contact Philippa Campbell at [Philippa.campbell@jefferson.edu](mailto:Philippa.campbell@jefferson.edu)

assistant to determine interobserver agreement rates. Agreement rates were calculated for each category and for the overall videotape. The number of intervals for which the coders demonstrated agreement on a category was summed, divided by the total number of intervals, and multiplied by 100. Overall, the two observers demonstrated mean percent agreement of 92% (99% for interaction partners, 93% for content of interaction, 85% for role of home visitor, and 94% for role of parent).

*Comparison across traditional and participation-based groups.* Independent samples, two-tailed, *t*-tests were conducted to compare intervention visits rated on the NERS scale

as traditional or participation-based across the combined codes on the HVOF. We calculated standardized difference effect sizes based on the mean percent interval data for each group and the standard deviation of the traditional group, where  $d = .20$ ,  $d = .50$ , and  $d = .80$  are considered small, medium, and large effect sizes, respectively (Rosenthal & Rosnow, 1991).

## RESULTS

### *Characteristics of Home Visits Rated by the NERS*

Based on NERS ratings, 35 (70%) of the 50 videotaped visits were coded as traditional,

**Table 4**  
*Natural Environments Rating Scale (NERS)*

Item	% Traditional n = 35 (70%)	% Participation Based n = 15 (30%)
<b>Setting</b>		
Room in child's home	91.4	73.3
Area adjacent to home	8.6	0
Area in family's neighborhood	0	26.7
<b>Type of Activity</b>		
Self care	22.9	26.7
Playing with toys	51.4	20.0
Motor activities	28.6	46.7
Communication skills	28.6	26.7
<b>Child Engagement</b>		
Not engaged	2.9	6.7
Somewhat engaged	42.9	26.7
Very engaged	42.9	66.7
<b>Activity Leader</b>		
Home visitor	82.9	26.7
Caregiver	8.6	53.3
Child	8.6	20.0
<b>Use of Materials</b>		
Unnatural	5.7	0
Natural	94.3	100
<b>Role of Caregiver</b>		
Not present	5.7	0
Observer	62.9	0
Directly interacting with child	31.4	100
<b>Role of Home Visitor</b>		
Passive observer	11.4	0
Active observer	5.7	26.7
Directing activity	82.9	0
Facilitating activity	0	73.3

while 15 (30%) were coded as participation-based. Table 4 shows the percentages found for each NERS category across the two groups. Overall, most of the visits occurred in a room in the child's home although 27% of the participation-based services occurred in an area in the family's neighborhood such as a park, playground, or store. A range of activities (e.g., playing with toys, physical motor activities) were represented in both types of visits. Children were rated as *not engaged* in less than 10% of visits in both categories, and children in participation-based services were more frequently rated as *very engaged* when compared to children receiving traditional services.

To investigate whether the visits classified as traditional or participation-based differed in categories of setting, type of activity, and engagement, chi-square tests were used. Only one statistically significant difference was found: participation-based home visits were more likely to be provided in the child's neighborhood than were the traditional visits ( $\chi^2 = (1, N=75) = 10.15, p < .01$ ). Phi, which indicates the strength of the association between two variables, was .45 (medium to large effect).

Differences were found for each of the four dimensions used to determine whether the home visit activity session was rated as traditional or participation-based. For visits

coded as *traditional*, the interventionist was predominantly the leader and director of the activity, with the caregiver most often acting as an observer. In the visits coded as *participation-based*, either the caregiver or the child was the activity leader. The caregiver directly interacted with the child, and the most frequent role of the interventionist was as a facilitator. In both groups, materials were almost exclusively natural to the environment.

### ***Characteristics of Home Visits Rated by the HVOF***

Table 5 shows the means and standard deviations of the traditional ( $n = 35$ ), and participation-based groups ( $n = 15$ ) for the combined codes associated with the four HVOF categories. These data are reported as percentages of intervals for each code. The results of independent-samples, two-tailed  $t$ -tests comparing the traditional and participation-based groups for each category also are illustrated in Table 5. Although the percentage of intervals rated as *no interaction/transition* (i.e., no interactions among caregiver, home visitor, or child) were small in both the traditional and participation-based videotapes, the videotapes rated as participation-based included a greater percentage of *no interaction/transition* intervals and this difference was statistically significant across each of the four rating categories.

***Interaction partners.*** Overall, a majority of interactions for both groups consisted of interactions between the interventionist-caregiver-child. Interactions between only the child and the interventionist were more frequent, however, in the traditional group and these differences were significant ( $t(47.5) = 3.33, p = .002$ ). According to Cohen's (1988) guidelines, the standardized difference effect size ( $d = .65$ ) is considered a medium effect.

Interactions between the caregiver and the child alone (e.g., no interventionist interaction) occurred less frequently in traditional than in participation-based groups (2.39% versus 17.46% of intervals). This difference was not statistically significant ( $t(14.49) =$

$-1.84$ ) but the effect size was large ( $d = -2.39$ ). Very few of the intervals in either group were coded with interactions between other combinations of participants (e.g., other adult and child or caregiver and sibling).

***Content.*** For both groups, most interactions involved some type of play activity. This finding was not unexpected due to the sample inclusion criteria of a visit that was intervention-based; play is the content code in the modified HVOF used to code any activity related to the child. The percentage of intervals that focused on a discussion between the parent and interventionists about the child's needs were similar across traditional and participation-based groups. Slightly more participation-based intervals included an interventionist providing an explanation of a topic to the caregiver. Neither group frequently engaged in discussion of other sorts (i.e., discussion about other family members, services, administrative issues, or general talk). Nor did either group often display content about "other" areas (e.g., child crying and interaction centers on calming child).

***Role of the home visitor/interventionist.*** Statistically significant and noteworthy differences between the traditional and the participation-based groups occurred for six of eight role categories. Interventionists in the traditional group more often displayed behavior related to interacting with children in an adult-directed activity. These included providing both *sensitive direction*, where the interventionist initiates an activity that is well-paced and involves opportunities for the child to make choices, and *sensitive facilitation*, where the interventionist joins into child-initiated play and actively engages in and facilitates a child-initiated play activity. The effect size for both of these codes was large according to Cohen's (1998) guidelines ( $d = .99$  and  $d = .82$ , respectively). Interventionists in the traditional group more often provided *insensitive interactions*, a coding category that combined *insensitive facilitation* (e.g., the interventionist is passive and mainly observes the child engaged in child-initiated

**Table 5**  
**Home Visit Observation Form (HVOF) Ratings**

Variable	Traditional ( <i>n</i> = 35) <i>M</i> % ( <i>SD</i> %)	Participation- Based ( <i>n</i> = 15) <i>M</i> % ( <i>SD</i> %)	<i>t</i>	<i>df</i> <sup>1</sup>	<i>p</i>	<i>d</i>
<b>Interaction Partners</b>						
Caregiver, child	2.39 (6.31)	17.46 (31.41)	-1.84	14.49	n.s.	-2.39
Home visitor, child	22.64 (27.04)	5.16 (10.05)	3.33	47.48	.002	0.65
Home visitor, caregiver, child	71.15 (27.39)	63.93 (36.21)	0.77	48.00	n.s.	0.26
Other combination	1.73 (8.44)	5.09 (12.04)	-1.13	48.00	n.s.	-0.40
No interaction	2.09 (3.27)	8.36 (10.07)	-2.36	15.28	.03	-1.92
<b>Content</b>						
Discussion of child's needs	5.81 (16.74)	5.12 (5.52)	0.15	48.00	n.s.	0.04
Explaining	2.53 (7.65)	5.05 (11.00)	-0.81	20.06	n.s.	-0.33
Play	83.48 (20.44)	71.11 (24.00)	1.86	48.00	n.s.	0.61
Other discussion	0.66 (1.78)	1.05 (3.36)	-0.53	48.00	n.s.	-0.22
No interaction or transition	5.04 (5.24)	14.48 (12.97)	-2.72	15.99	.02	-1.80
Other	2.12 (6.97)	3.19 (9.90)	-0.44	48.00	n.s.	-0.15
<b>Role of home visitor</b>						
Sensitive direction	36.24 (27.15)	9.33 (13.80)	4.63	46.40	.001	0.99
Sensitive facilitation	20.61 (20.49)	3.79 (4.44)	4.61	40.69	.001	0.82
Supportive interaction	3.45 (5.72)	24.57 (25.64)	-3.16	14.60	.01	-3.69
Observing	9.50 (18.89)	23.54 (22.71)	-2.27	48.00	.03	-0.74
Conversation with caregiver	8.71 (17.85)	12.15 (15.34)	-0.65	48.00	n.s.	-0.19
Insensitive interaction	11.93 (14.30)	5.09 (8.53)	2.09	42.60	.04	0.47
No interaction or transition	5.35 (5.86)	19.72 (17.83)	-3.05	15.31	.01	-2.45
Other	4.06 (10.86)	1.81 (5.16)	0.77	48.00	n.s.	0.21
<b>Role of Caregiver</b>						
Interacting with child	24.71 (28.57)	58.23 (30.28)	-3.74	48.00	.001	-1.17
Watching	34.74 (27.03)	10.69 (16.25)	3.88	42.36	.001	0.89
Conversation with home visitor	9.30 (18.19)	10.55 (13.71)	-0.24	48.00	n.s.	-0.07
Caregiver not involved in interaction	23.91 (27.04)	3.93 (5.98)	4.14	40.91	.001	0.74
No interaction or transition	4.59 (5.19)	14.48 (12.97)	-2.86	15.96	.01	-1.91
Other	2.75 (8.19)	2.12 (6.16)	0.26	48.00	n.s.	0.08

Note. <sup>1</sup> = Degrees of freedom vary because statistical adjustments for unequal means and variances were invoked.

**Table 6**  
*Percent of Intervals for Role of Caregiver and Role of Interventionist by NERS Rating Category*

NERS Rating Category	Traditional M% Intervals on HVOF	Participation Based M% Intervals on HVOF
Role of caregiver		
Not present	23.91	3.93
Observer	34.74	10.69
Directly interacting with child	24.71	58.23
Role of interventionist		
Passive observer	—	—
Active observer	9.50	23.54
Directing activity	36.34	9.33
Supporting/facilitating activity	3.45	24.57

*Note.* NERS = Natural Environments Rating Scale; HVOF = Home Visiting Observation Form.

play) and *insensitive direction* (e.g., the interventionist directs the activity and the child is provided little choice or opportunity to respond). Differences between the groups were statistically significant ( $t(42.6) = 2.09$ ,  $p = .04$ ) with a medium effect size ( $d = .47$ ).

As shown in Table 5, intervals where the interventionist supported (through modeling or verbal support) the interaction between the child and caregiver were more frequent in the participation-based group. Similarly, interventionists in the participation-based group more often observed the caregiver interacting with the child. The remaining two roles for interventionists were not statistically different between groups. Participation-based interventionists slightly more often engaged in conversation with caregivers than did traditional providers. Videotapes rarely showed providers engaging in “other” roles (e.g., soothing crying child, wiping child’s nose).

**Role of the caregiver.** Statistically significant and noteworthy differences emerged in four of six categories associated with caregiver roles. Caregivers in the traditional group most frequently *watched* the interventionist and child interact. Caregivers in the traditional group also showed a higher percentage of intervals as *not being involved* in the interaction. Both effect sizes for these categories were medium to large ( $d = .89$  and  $.74$ , respectively). For the participation-based

group, the predominant caregiver role was to interact with the child (58.2% of intervals). The two groups showed roughly even percentages of intervals for caregivers (a) engaging in conversation with the interventionist and (b) engaging in other interactions (e.g., interacting with a sibling child or another adult).

### ***Differentiating Traditional and Participation-Based Services***

Although the number of visits that were rated as participation-based was smaller than those rated as traditional, the NERS coding categories differentiated between the two approaches. Of the four categories that comprised the NERS, only the role of the home visitor and role of the caregiver overlap with categories on the HVOF. Neither the use of materials that would be easily available in the home nor ratings of who serves as the leader of the intervention activity are included on the HVOF. To compare the NERS and the HVOF, a matrix was constructed comparing caregiver and interventionist roles for traditional and participation-based services. As shown in Table 6, mean percentages of intervals for each of the caregiver and interventionist roles aligned with the types of roles expected in traditional and participation-based services. Additionally, interventionist characteristics for the two types of service categories (see Table 2) were

compared using independent *t*-tests and, as expected, no statistically significant differences for total years of experience ( $t(38) = .620, p = ns$ ), total years of experience in EI ( $t(40) = .238, p = ns$ ), or hours per week that the interventionist worked in early intervention ( $t(38) = .293, p = ns$ ) were found. Chi-square analyses showed no differences between the two groups based on the discipline of the interventionist ( $\chi^2(4, N = 41) = 2.36, p = ns$ ).

## DISCUSSION

Characteristics of home visits that included a child-focused intervention activity (as opposed to primarily discussion between the interventionist and caregiver) were rated using two different scales to describe characteristics of visits and to explore the extent to which different types of service approaches could be distinguished based on these characteristics. The *Natural Environments Rating Scale* (NERS) was constructed and its effectiveness in distinguishing the two types of services was explored.

The extant literature suggests that early intervention services have been provided most frequently through a traditional model where an interventionist-directed activity is used to provide opportunities for a child to learn or practice new skills (e.g. Dunst, Trivette et al., 2001). Findings in this study are consistent with earlier studies. A majority (70%) of the activities videotaped by interventionists in our sample and submitted as "typical" were rated as traditional. Our traditional services descriptions are comparable to descriptions of early intervention home visits described in previous studies (McBride & Peterson, 1997; Wilcox & Lamorey, 2004). In each of these studies, early interventionists were most likely to be directing activities with children while caregivers played primary roles as observers. In the traditional-rated videotapes in the present study, the interventionist primarily directed the child-focused activity although in a small percentage of instances, interventionists used facilitation rather than direction by

joining and following the child's lead within the activity. The HVOF-M codes of *direction* and *facilitation* relate specifically to interventionist use of these strategies when interacting with children. In the present study sample, these strategies were used more frequently when traditional services were provided because interventionists had more direct interaction with children than in participation-based services. The differences in the use of direction and facilitation in videotapes rated as traditional were statistically significant and noteworthy when compared to participation-based services.

In all videotapes, the primary interaction partners were most often a triad of the caregiver-child-interventionist, but almost a quarter of the coded interactions for traditional services involved only the interventionist-child (i.e., the caregiver was either not present or was present in the room but was not part of the interaction even in an observer role). What the caregiver was doing during the session was reflected under the *role of the caregiver* category. For the traditional services group, the caregivers' primary roles were watching and not present in the interaction. There were statistically significant and noteworthy differences between the traditional and participation-based group across both of these coding categories.

A total of 30% of the home visits in our sample were rated as participation-based. In these visits, either the caregiver or the child was the leader of the activity and the interventionist supported or actively observed the caregiver-child interaction. The use of supportive interaction and observation in participation-based services differed significantly when compared with traditional services. The primary interaction partners were a triad of the caregiver-child-interventionist, but in participation-based services, the caregiver's primary role was interacting with the child and this difference was statistically significant when compared with traditional services where the caregivers' role was most frequently as an observer. For categories related to the role of the interventionist and the role of the caregiver,

he interactions that typified both participation-based and traditional services were distinctly different. Participation-based services reflected use of natural environments as context for learning opportunities and primary interventionist role of supporting caregiver-child interactions.

Based on the findings of this study and the few others that have examined systematically what occurs during early intervention visits (McBride & Peterson, 1997; Peterson et al., 2007; Wilcox & Lamorey, 2004), it seems clear that despite a decade or more of emphasis on family-centered approaches, use of natural settings, and the importance of caregiver-child interaction, many interventionists are not applying these concepts within early intervention services. The typically used traditional approach seems to be in direct opposition to recommended practices. Recommended practices suggest that intervention should be provided so that providers teach caregivers how to use the activities and routines in natural settings as opportunities for learning (Sandall, Hemmeter, Smith, & McLean, 2005; Tremel & Campbell, 2007.)

In the present study, the NERS and HVOF-M both were able to distinguish the two approaches to service delivery. This finding is noteworthy because the HVOF-M is a research-based tool that rates four categories in 30-second intervals and requires significant resources for its use. In contrast, the NERS, designed for use with intervention-based activities, uses global ratings that are made following the conclusion of an intervention activity. The HVOF, however, takes a broader perspective of early intervention visits and its use is not restricted to activities with a child intervention focus.

Three major limitations present in this study should be acknowledged. First, the sample was a convenience sample of interventionists who were asked to obtain and submit a videotape as part of a professional development workshop. Interventionists selected both the family and the activity they taped. Neither the families nor the children might have been representative of the interventionist's caseload or the population of

children in the early intervention system in the targeted state or in the United States. For example, no children under the age of 12 months were included in the sample. Further, although interventionists were asked to tape an activity (of their choice) of 20 min or longer, the length of the activities varied considerably and many were shorter than 20 min. Although we reported percent interval data as a way to represent the occurrence of HVOF coding categories across videotaped activities of varying lengths, large within-group variability on the HVOF coding categories was evident.

Second, the way in which the taping was conducted was determined by the interventionist and the strategies used to obtain the videotape varied. In some instances, the camera was left on, but unattended. Alternatively, an individual not usually present at the home visit did the recording. In other instances, a family member (but not the primary caregiver) took responsibility for videotaping. The different strategies used to film the videotape might have influenced the interactions that were recorded.

Interventionists submitted only one videotaped example of an intervention activity with one child/family. Other studies (McBride & Peterson, 1997; Peterson et al., 2007; Wilcox & Lamorey, 2004) have included three or more samples of the same interventionist with the same family/child in order to obtain a more stable and representative picture of interactions. Given that certain features of typical visits are likely to vary from visit to visit or that a particular visit might be influenced by circumstances such as family crisis, child progress, child engagement, or other features, our visits were likely not more than a one-time view of a particular child/family and are not likely to have been representative of interventionist practices with either the selected child/family or across children/families with whom an individual interventionist was working. To obtain an accurate view of individual interventionist practices, samples would need to include more than one videotaped visit with more than one family/child.



### **Implications for Practice**

Despite noted limitations, distinguishing two types of service approaches might be useful within the field of early intervention. Operationalizing practice so interventionists know what they should or should not do during intervention visits might assist them to translate recommended practice principles into their interactions with children and families. The NERS, developed as a way to rate the occurrence of literature-based recommended practices, might be used by researchers as a measure of fidelity of implementation of recommended practices during home visits. Supervisors might use the NERS to identify practices being used by their staff and to guide them to better practice. The NERS also might be used by early interventionists to identify the strengths of their intervention and areas that need to be improved. With this type of information, interventionists and supervisors might be able to identify specific areas for professional development. Additionally, interventionists or their supervisors might learn that early intervention visits reflect recommended practices under some, but not under all circumstances. For example, interventionists might face challenges implementing recommended practices with families with particular characteristics, children with specific types of disabilities, or in certain types of natural settings, such as child care programs.

Early interventionists have been exposed to a variety of different terms and models of early intervention, each of which are based on recommended practices and family-centered approaches. Two primary components of recommended practices are the provider-caregiver-child relationship and the use of activities and routines (e.g., activity settings) as sources for both intentional and incidental child learning opportunities. The current recommended models or approaches each emphasize different aspects of a family-centered approach and no one model or approach equally addresses all components of recommended practice (Stremel & Campbell, 2007). For example, coaching (Hanft, Rush, & Shelden, 2004) promotes strategies

for interacting with families, while family guided routines-based intervention (Woods, 2005) provides strategies for identifying family routines and developing routines-based intervention plans.

Despite recommended practices and their translation into various models or approaches, few families and children appear to be receiving optimal services (e.g., Bruder, 2000; Hanson & Bruder, 2001; Dunst, Bruder, Trivette, Hamby et al., 2001). Findings from the present study and those conducted by others related to what interventionists do during visits illustrate that typical interventionist practices often do not match those that are recommended (McBride & Peterson, 1997; Wilcox & Lamorey, 2004). These studies cover a 10-year time span, from 1997 through the present, a time period during which homes have become the primary location for providing early intervention services and significant time and resources have been directed to offering professional development in areas such as provider-caregiver-child interactions and working within the context of natural settings.

Conceptually based models describing general characteristics of early intervention practice have been prolific in the early intervention field as researchers, developers, policymakers, providers, and families have struggled for over a decade to define and implement effective practice. Perhaps shifting focus to specific features of participation-based services and the contrast of this type of service with more traditional services will allow interventionists not only to focus on their day-to-day interactions with children and families but also to optimize these interactions so recommended practices are regularly used during home visits.

### **REFERENCES**

- Axtmann, A., & Dettwiler, A. (2005). *The visit: Observation, reflection, synthesis for training and relationship building*. Baltimore: Brookes.
- Bruder, M. B. (2000). Family-centered early intervention: Clarifying our values for the new millennium. *Topics in Early Childhood Special Education, 20*, 105-115.

- Campbell, P. H. (2004). Participation-based services: Promoting children's participation in natural settings. *Young Exceptional Children*, 8, 20–29.
- Campbell, P. H., & Halbert, J. (2002). Between research and practice: Provider perspectives about early intervention. *Topics in Early Childhood Special Education*, 22, 213–226.
- Campbell, P. H., & Sawyer, L. Brook (2004). *Natural Environments Rating Scale*. Available from Child & Family Studies Research Programs, Thomas Jefferson University, Philadelphia, PA.
- Chai, A. Y., Zhang, C., & Bisberg (2006). Rethinking natural environment practice: Implications from examining various interpretations and approaches. *Early Childhood Education Journal*, 34, 203–208.
- Code of Federal Regulations, 34 CFR 303.18, July 1, 1999.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Cripe, J. W., Hanline, M. F., & Daley, S. E. (1997). Family-guided routines for early intervention services. *Young Exceptional Children*, 1, 18–26.
- Dunst, C. J. (2000). Everyday children's learning opportunities: Characteristics and consequences. *Children's Learning Opportunities Report*, 2(1), 1–2.
- Dunst, C. J. (2001). Participation of young children with disabilities in community learning activities. In M. J. Guralnick (Ed.). *Early childhood inclusion: Focus on change* (pp. 307–333). Baltimore: Brookes.
- Dunst, C. J., & Bruder, M. B. (1999). Family and community activity settings, natural learning environments, and children's learning opportunities. *Children's Learning Opportunity Report*, 1(2), 1–2.
- Dunst, C. J., Bruder, M. B., Trivette, C. M., Hamby, D., Raab, M., & McLean, M. (2001). Characteristics and consequences of everyday natural learning opportunities. *Topics in Early Childhood Special Education*, 21, 68–92.
- Dunst, C. J., Bruder, M. B., Trivette, Raab, M., & McLean, M. (2001). Natural learning opportunities for infants, toddlers, and preschoolers. *Young Exceptional Children*, 4, 18–25.
- Dunst, C. J., Hamby, D., Trivette, C. M., Raab, M., & Bruder, M. B. (2000). Everyday family and community life and children's naturally occurring learning opportunities. *Journal of Early Intervention*, 23, 151–164.
- Dunst, C. J., Herter, S., & Shields, H. (2000). Interest-based natural learning opportunities. *Young Exceptional Children Monograph Series*, 2, 37–48.
- Dunst, C. J., Trivette, C. M., Humphries, T., Raab, M., & Roper, N. (2001). Contrasting approaches to natural learning environment interventions. *Infants and Young Children*, 14, 48–63.
- Edelman, L. (2004). Principles and strategies for family-centered home based visits. *Resources and Connections*, 3(1), 1–6. Retrieved June 30, 2007, from [http://www.earlychildhoodconnections.org/files/home\\_based\\_services.pdf](http://www.earlychildhoodconnections.org/files/home_based_services.pdf)
- Hanft, B., Rush, D., & Shelden, M. (2004). *Coaching families and colleagues in early childhood*. Baltimore: Brookes.
- Hanson, M. J., & Bruder, M. B. (2001). Early intervention: Promises to keep. *Infants and Young Children*, 13(3), 47–58.
- Klass, C. S. (2003). *The home visitor's guidebook: Promoting optimal caregiver and child development* (2nd ed.). Baltimore: Brookes.
- McBride, S., & Peterson, C. (1997). Home-based intervention with families of children with disabilities: Who is doing what? *Topics in Early Childhood Special Education*, 17, 209–233.
- McWilliam, R. A. (2000). Its only natural — to have early intervention in the environments where it is needed. *Young Exceptional Children Monograph Series*, 2, 17–26.
- McWilliam, R. A. (2005). Early intervention in natural environments. Retrieved August 22, 2005, from Vanderbilt University Web site: <http://www.vanderbiltchildrens.com/interior.php?mid=1218>
- McWilliam, R. A., & Scott, S. (2001). A support approach to early intervention: A three-part framework. *Infants and Young Children*, 13(4), 55–66.
- Peterson, C. A., Luze, G. J., Eshbaugh, E. M., Jeon, H.-J., & Kantz, K. R. (2007). Enhancing parent-child interactions through home visiting: Promising practice or unfulfilled promise. *Journal of Early Intervention*, 29, 119–140.
- Pretti-Frontczak, K., & Bricker, D. (2004). *An activity-based approach to early intervention* (3rd ed.). Baltimore: Brookes.
- Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of behavioral research: Methods and data analysis* (2nd ed.). New York: McGraw-Hill.
- Sandall, S., Hemmeter, M. L., Smith, B., & McLean, M. (2005). *DEC recommended practices: A comprehensive guide for practical application in early intervention/early childhood special education*. Longmont, CO: Sopris West.

- Stremel, K., & Campbell, P. H. (2007). Implementation of early intervention within natural environments. *Early Childhood Services: An Interdisciplinary Journal of Effectiveness*, 1(2), 83–105.
- U.S. Department of Education, Office of Special Education Programs. (2003). *Data analysis system (DANS) percentage of Part C infants and toddlers served in the home and in programs for typically developing children, 1994, 1997, 2000*. Retrieved on August 1, 2005 from <http://www.ideadata.org/PartCDataMeeting2003.asp>.
- U.S. Department of Education, Office of Special Education Programs. (2004). *IDEA Part C program settings* (2004). Retrieved on December 1, 2006 from [https://www.ideadata.org/arc\\_toc7.asp#partcEIS](https://www.ideadata.org/arc_toc7.asp#partcEIS).
- Valvano, J. (2004). Activity-focused motor interventions for children with neurological conditions. *Physical and Occupational Therapy in Pediatrics*, 24(12), 79–107.
- Washington, K., Schwartz, I., & Swinth, Y. (1994). Physical and occupational therapists in naturalistic early childhood settings: Challenges and strategies for training. *Topics in Early Childhood Special Education*, 14, 333–349.
- Wasik, B. H., Bryant, D., & Lyons, C. M. (1990). *Home visiting: Procedures for helping families*. Thousand Oaks, CA: Sage.
- Wilcox, M. J., & Lamorey, S. (October 1, 2004). *Relationship-based practice in early intervention settings: The experimental investigation of impact and effectiveness: Final report*. U. S. Department of Education, Field-Initiated Research R305T00049.
- Wilcox, M. J., Campbell, P. H., & Lamorey, S. (2006, February). *Home visiting in early intervention: What happens and what does it mean for families and children?* Paper presented at the CRIEI Conference, San Diego, California.
- Woods, J. (2005). *Family guided routines-based intervention*. Retrieved August 15, 2005, from Florida State University, Family-Guided Routines- Based Intervention Project Web site: <http://fgrbi.fsu.edu>
- Woods, J., Kashinath, S., & Goldstein, H. (2004). Effects of embedding caregiver-implemented teaching strategies in daily routines on children's communication outcomes. *Journal of Early Intervention*, 26, 195–193.

---

Address correspondence to **Philippa Campbell**, 5<sup>th</sup> floor, Edison, 130 S. 9<sup>th</sup> St., Philadelphia, PA 19107. E-mail: [picamp@aol.com](mailto:picamp@aol.com). or [Philippa.campbell@jefferson.edu](mailto:Philippa.campbell@jefferson.edu)

## Appendix A Natural Environments Rating Scale

Tape #: \_\_\_\_\_ Length of Tape: \_\_\_\_\_ Rater: \_\_\_\_\_ Date Rated: \_\_\_\_\_

<b>Room in the child's home</b>				
Area adjacent to the home (e.g., backyard play area)				
Area in the child's/family's neighborhood (e.g., library; rec center, playground; walks in neighborhood)				
Recreational setting selected and used by family (e.g., gymboree; Y swim program; health club)				
Community setting selected and used by family (e.g., church; restaurants; stores; mall)				
Transportation (e.g., car; bus-public)				
Child care program				
Other: _____				
<b>Child/home visitor, child/caregiver, or child/caregiver/home visitor are engaged in an activity in which the child's participation is being facilitated or child learning strategies are being embedded.</b>				
An activity is going on with the child but the caregiver/home visitor are engaged in a discussion that is not related to the way in which the participants are interacting in the activity				
* Caregiver-home visitor are engaged in discussion, and no specific activity is occurring with the child.				
* There is no meaningful interaction (either physical or verbal) between any of the participants.				
* If there is no activity occurring, discontinue coding here.				
<b>Check applicable activity</b>				
Participation in activity or routine outside the home: _____ (e.g., participating at a restaurant, participating in story time during child care, riding in the car)				
Self-Care: Eating, Bathing, Dressing				
Playing with toys or other materials by self, with caregiver, with other children				
Motor activities (e.g., swinging, crawling, climbing)				
Socializing with other children				
Communication skills				
Other: _____				
<b>Circle appropriate response</b>				
How engaged is the child in the activity?	Not engaged	Somewhat engaged	Very engaged	
Who initiated the activity?	HV (0)	Caregiver (1)	Child (1)	
<b>VI. MATERIALS</b> <span style="float: right;"><b>Circle appropriate response</b></span>				
Can the materials used in the activity be found naturally in the setting?	No – unnatural (0)		Yes – natural (1)	
<b>Circle appropriate response</b>				
What is the role of the caregiver in the activity?	Not Present (0)	Observer (0)	Interacting with child directly (1)	
<b>VIII. ROLE OF HOME VISITOR</b>				
What is the role of the home visitor in the activity?	Passive Observer (no interaction) (0)	Active Observer (limited conversation w/ child or caregiver) (0.5)	Directing activity with child (0)	Facilitating activity between caregiver and child (1)
Given the ratings for V-VIII above, the overall intervention can be best categorized as:	Traditional less than 2 pts		Participation-based 2.5 pts or greater	