

Journal of Early Intervention

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

Everyday Family and Community Life and Children's Naturally Occurring Learning Opportunities

Carl J. Dunst, Deborah Hamby, Carol M. Trivette, Melinda Raab and Mary Beth Bruder

Journal of Early Intervention 2000 23: 151

DOI: 10.1177/10538151000230030501

The online version of this article can be found at:

<http://jei.sagepub.com/content/23/3/151>

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/23/3/151.refs.html>

>> [Version of Record](#) - Jan 1, 2000

[What is This?](#)

Everyday Family and Community Life and Children's Naturally Occurring Learning Opportunities

CARL J. DUNST

*Orelena Hawks Puckett Institute and
Family, Infant and Preschool Program, Western Carolina Center*

DEBORAH HAMBY, CAROL M. TRIVETTE, & MELINDA RAAB

Orelena Hawks Puckett Institute

MARY BETH BRUDER

University of Connecticut Health Center

National surveys of nearly 3300 parents (and other caregivers) of infants, toddlers, and preschoolers with or at-risk for developmental delays were conducted to ascertain the sources of naturally occurring learning opportunities afforded young children in the context of family and community life. One group of parents completed a survey about family life as sources of learning opportunities (N = 1723), and another group completed a survey of community life as sources of learning opportunities (N = 1560). Confirmatory factor analysis indicated that both family and community life were each made up of 11 different categories of learning opportunities. Results indicate the 22 categories provide a framework for recognizing and identifying sources of learning opportunities providing children a rich array of experiences constituting natural learning environments.

An ecological systems theory perspective of children's learning views the many settings making up the fabric of family and community life as the sources and contexts of development-enhancing learning opportunities (Bronfenbrenner, 1979, 1992; O'Donnell, Tharp, & Wilson, 1993). These learning contexts have been described as activity settings (Farver, 1999; Gallimore, Goldberg, & Weisner, 1993; Gallimore, Weisner, Bernheimer, Guthrie, & Nihira, 1993), microsystems (Bronfenbrenner, 1979), activity systems (Wertsch, 1985), microsettings (O'Donnell, 1992), and natural learning environments (Dunst, Bruder, Trivette, Raab, Hamby, & McLean, in press). They include the experiences and opportunities afforded developing children as part of daily living, child and family

routines, family rituals, and family and community celebrations and traditions. These experiences and opportunities may be planned or may happen serendipitously, and across time and in their aggregate, they constitute the life experiences of a developing child (Bronfenbrenner, 1979). The term *activity setting* (Farver, 1999; O'Donnell et al., 1993) is adopted in this paper for characterizing the contexts of development-enhancing life experiences because it captures the rich array of diverse learning opportunities afforded people in general (Cole, 1996; O'Donnell et al., 1993) and young children specifically (Dunst, Bruder, Trivette, Raab, & McLean, 1998; Göncü, 1999; Rogoff, Mistry, Göncü, & Mosier, 1993). Learning that takes place in the context of family and community activity set-

tings is best described as *situated learning* (Lave & Wenger, 1991). Situated learning is learning that occurs in the context of real life experiences that happen day in and day out, on certain days of the week, at certain times of the year, etc. and that promote acquisition of competence that is culturally rooted, functional, and makes possible increased child participation in those settings, both social and nonsocial.

Considerable investigative effort has been expended on identifying different kinds of activity settings that make up the fabric of family and community life of young children (Dunst, 1997, 1999; Dunst et al., 1998; Göncü, 1999; Tudge et al., 1999; Umstead, Boyd, & Dunst, 1995), the factors associated with and influencing child and parent behavior in the context of the activity settings (Beckman et al., 1998; Boyce et al., 1977; Ehrmann, Aeschleman, & Svanum, 1995; Gallimore, Weisner, et al., 1993; Gallimore, Weisner, Kaufman, & Bernheimer, 1989; Sprunger, Boyce, & Gaines, 1985), and the use of situational learning as a factor having development-enhancing consequences (Bernheimer, Gallimore, & Weisner, 1990; Stremel et al., 1992; Trivette, Dunst, & Deal, 1997). Dunst et al. (1998), for example, investigated family and community activity settings as the contexts of learning activities for infants, toddlers, and preschoolers with or at-risk for delays, and found that any one physical location is the source of many different kinds of activity settings, that any one activity setting is the source of multiple kinds of learning opportunities, and that any one learning opportunity is the context of many different kinds of situated learning.

An important finding from research on activity settings as sources of situated learning opportunities is that the experiences afforded young children having developing-enhancing consequences are a combination of planned and unplanned, structured and unstructured, and intentional and incidental learning experiences (Göncü, 1999; Lancy, 1996; Rogoff, Mistry, Göncü, & Mosier, 1991). This same pattern runs throughout the data from our own research (Dunst et al., 1998). The importance

of intentionally planned and structured early childhood learning opportunities is well documented (see e.g., Guralnick, 1997). The value and importance of informal learning opportunities arising naturally in the context of daily living are often overlooked but need to be highlighted. As noted by Hanks (1991), "learning is likely to take place whenever people interact under conditions of [situated learning opportunities]. This would imply that certain participatory [opportunities] may be 'dispositionally' adapted to producing learning even if the participants are not attempting to acquire or inculcate identifiable skills" (p. 19).

The study described in this paper focused specifically on sources of activity settings and learning opportunities making up the fabric of family and community life among children participating in Part C early intervention programs, Part B (619) early childhood–special education programs, Early Head Start and Head Start programs, and other early intervention and preschool programs (e.g., Even Start, Parents as Teachers) throughout the United States and several of its jurisdictions. The investigation was conducted as part of the Increasing Children's Learning Opportunities Through Families and Communities Early Childhood Research Institute (Dunst & Bruder, 1999; Dunst et al., 1998). The purpose of the Institute is to identify, develop, and evaluate strategies and approaches for increasing the number and intensity of naturally occurring learning opportunities functioning as a form of early intervention promoting and enhancing the learning and development of young children with or at-risk for delays or disabilities. Conceptually, family and community life are viewed as two major contexts of children's learning in *addition* to learning opportunities afforded children as part of their participation in more formal kinds of early childhood programs (early intervention, preschool, child care, therapy, etc.). Accordingly, the benefits of early childhood intervention would be expected to be maximized when a child experiences development-enhancing learning opportunities in the context of all three sources.

The Children's Learning Opportunities Institute staff are engaged in several lines of descriptive and experimental research using a number of different kinds of methodologies identifying the activity settings making up the fabric of family and community life, the particular settings providing the richest numbers of learning opportunities, the factors associated with the occurrence of particular activity settings and the development-enhancing qualities of the settings, the environmental conditions best suited for promoting acquisition of child competence in the context of the activity settings, and the behavioral and developmental consequences of the activity settings as sources of learning opportunities (see Dunst & Bruder, 1999; Dunst et al., in press). As part of the Institute's research, two national surveys were conducted to identify and categorize the various kinds of activities serving as the sources of learning opportunities for young children birth to 6 years of age in the context of family and community life, respectively. The aim of the surveys was to gather information from families throughout the United States and several jurisdictions to shed light on the rich array of activity settings making up the fabric of family and community life with a focus on the sources of activity settings in which desired child behavior was learned or manifested.

METHOD

Surveys

Two surveys, one on family life as sources of children's learning opportunities, and the other on community life as sources of children's learning opportunities, were developed for the study. Each survey included 50 different kinds of activity settings and sources of learning opportunities. The items were identified from an extensive review of the literature with an emphasis on activity settings occurring in families and communities of people from many different racial, ethnic, and cultural backgrounds in the United States and its jurisdictions. The references from which the activities were identified were of four types: Published and unpublished instruments and scales (e.g.,

Boyce, Jensen, James, & Peacock, 1983; Heath, Levin, & Tibbits, 1993; McCubbin, McCubbin, & Thompson, 1987); journal articles (e.g., Ballard, 1986; Dyck, 1992; Ehrmann et al., 1995; Labrell, 1996; Minami & McCage, 1995; Toyama & Muto, 1990); books and book chapters (e.g., Blum-Kulka, 1997; Koegel, Koegel, Kellegrew, & Mullen, 1996; McWilliam, 1996; Rogoff et al., 1993); and unpublished dissertations and manuscripts (e.g., Bucy, 1995; Dunst, 1997, 1999; Kellegrew, 1994; Stremel et al., 1992). (A complete list of the references about sources of children's learning opportunities is available at www.puckett.org/childlearn.)

Activities identified through the literature review were compiled into master lists, one for family activity settings and one for community activity settings. The two lists included some 200 and 300 activity settings respectively. A four-step process was used for identifying the activity settings included on each survey. First, the pool of activities on each list was grouped separately according to five types of learning contexts (daily activities, non-daily activities, traditions, celebrations, and rituals). Second, representative activities were selected for possible inclusion on the surveys. Universal (e.g., mealtimes), situational (e.g., petting zoos), and culturally relevant (e.g., listening to storytellers) activities were included to insure broad-based coverage. (For all but a few items, the activity settings and contexts of learning opportunities on the two surveys were selected so as to be mutually exclusive.) Third, each activity selected for inclusion on the surveys was back-referenced against the literature to ascertain if the activity settings, or variations of them, were found as part of the family or community life of people from seven racial, ethnic, and cultural backgrounds (African American/African Descent, American Indian/Native Alaskan, Asian, Caucasian, Latino/Hispanic, Middle Eastern, & Pacific Islander/Hawaiian). Fourth, the activities were reviewed again to be assured the final two lists of 50 items were ones occurring among families of preschool-aged children. (A few items on each survey were

replaced as a result of this final step in the item selection process.)

The survey included a list of activities the respondent and their family might do as part of family life or community life (depending on which version of the survey was completed). Respondents were instructed to indicate, on a five point scale ranging from not-at-all to always, how much each activity was a place or setting where their child learned or displayed desired behavior as part of the child's participation or involvement in the activity settings. A DNO (Does Not Occur) response category allowed a respondent to indicate that an activity did not happen for their family. (For the analyses described in this paper, DNO responses were coded as "1" to indicate the activity did not serve as a context for a child's learning.)

Both English and Spanish versions of the scales were written for the study. Subsequently, the scale was translated into four other languages (Yapese, Ulithian, Woleaian, Satawalese) for participants from Yap in the Federated States of Micronesia. The largest majority (>95%) of scales were completed in a self-report, written format. Others were administered orally: Either for respondents who indicated they wanted to complete the scales in this manner, or for respondents who indicated they needed translation into their preferred language, which was other than English, Spanish, or any of the Yap languages. To permit any parent or caregiver to participate in the study if they desired, many accommodations were made and requests honored.

Participant Recruitment

Part C early intervention programs in 46 states; Part B early childhood–special education programs in 39 states; Early Head Start and Head Start Programs in all 50 states, Puerto Rico, and the Federated State of Yap in Micronesia; and 140 American Indian Head Start, early intervention, and early childhood programs in 29 states were contacted to solicit interest in assisting with participant recruitment. Mailing lists of programs were obtained from Part C and Part B (619) coordinators and

from federal Head Start and Bureau of Indian Affairs program officers. A letter explaining the study and a program profile were sent to all programs on the mailing lists. The program profile asked for information about program type (Part C, Part B, Head Start, etc.), program location (home-based, center-based, combination, etc.), program size (number of children served), ages of children served (birth to 3, 3 to 5, birth to 5), characteristics of the children served (disabled, delayed, or at-risk), socioeconomic backgrounds of the families (poor, middle, upper), and ethnic backgrounds (see above) and languages spoken by families served by the program. More than 450 program profiles were received from programs in 48 states, Puerto Rico, and Yap. Profile information was used to stratify programs according to the above seven child, family, and program characteristics, and to select programs within each strata insuring that as much program and child/family diversity as possible was achieved. Additionally, programs serving typically underrepresented families were over selected to insure broad-based participation in the study. This basically involved over selection of programs in specific strata. A total of 222 programs were invited to participate in the study, 180 (81%) of which accepted our invitation.

Survey Distribution

Based on the number of children and families participating in the early intervention and early childhood programs at the time the study was conducted, an equal number of home and community surveys were sent to each program, up to a maximum of 100 family and 100 community surveys (only family surveys were completed by families from Yap.) Surveys along with a letter explaining the study and an informed consent letter were distributed primarily through individual program staff contacts with families. Some programs distributed the surveys by mailing them to the families.

Participants

Participants were 3,283 parents and other caregivers who completed either a family sur-

vey (N = 1,723) or a community survey (N = 1,560). Persons completing the surveys were predominantly biological mothers (89%) of children receiving early childhood intervention. Other participants included the children's biological fathers (5%), grandparents (2%), foster parents (1.5%), aunts (<1%), stepmothers (<1%), and other relatives (<1%).

Table 1 shows selected characteristics of the survey participants, their children and families, and the programs providing early childhood intervention for their children.¹ Although there was considerable variability among study participants in terms of age, education, and marital status, the largest majority were between 20 and 40 years of age, high school graduates, and married or living with a partner.

About half (46%) of the respondents identified their families as having an ethnicity other than Caucasian. Except for people with Asian or Middle Eastern region roots, study participants were quite diverse in their cultural and ethnic backgrounds. Family economic status was assessed using a financial adequacy measure. Respondents were asked to make judgments about the degree to which family financial resources were adequate on a 4-point scale ranging from not-at-all to very adequate. Findings indicated that the majority of respondents' family financial situations made them borderline to economically strained (Bowman, 1993; McLoyd, Jayaratne, Ceballo, & Borquez, 1994).

The ages of the respondents' children participating in an early childhood intervention program were quite varied, and covered the entire age range from birth to 6 years of age. The children were equally divided in terms of having an identifiable disability or developmental delay or for being at-risk for poor outcomes. Half (52%) of the children were enrolled in either Part C early intervention pro-

grams or Part B early childhood special education programs, or a combination of both types of programs. Most children were involved in center-based only programs or a combination of center- and home-based programs. One fourth of the children (26%) received 2 hours or less of services per week, whereas 43% of children received 10 hours or more of services per week.

Reliability

Accuracy of data entry and coding was ascertained by double entering the survey responses. Less than one-half of 1% of the more than 328,000 entries did not match when they were checked. Item responses not matching were corrected by comparing the data entries against the survey responses. The double entries were again checked to be sure 100% accuracy was achieved. To be assured that two persons coding the same surveys did not both inadvertently code items incorrectly, responses on randomly selected family and community surveys were checked against the response codes in the computerized database as an additional reliability check. Not a single error was found.

Data Analysis

Confirmatory factor analysis (CFA; Bentler, 1995) was used to ascertain major categories of naturally occurring children's learning opportunities. A first-order CFA model was used to test the multidimensionality of sources of learning opportunities (Byrne, 1994). More specifically, the analyses tested the hypothesis that activity settings are multidimensional in nature, where the different activities within a setting category provide similar kinds of learning opportunities.

Separate CFAs were performed on the family and community survey data. The CFA models included 11 family activity categories and 11 community activity categories. The models were based on preliminary statistical analyses (exploratory factor analysis) and both the conceptual and logical assignment of individual activities to the learning opportunities categories indicated by the exploratory

¹ Analyses comparing the community and family survey respondents on the 10 background and program characteristics variables shown in Table 1 indicated no difference between groups on any of the measures except for the proportions of Yap respondents which was expected inasmuch as these families completed only family surveys.

Table 1.
Background Characteristics of the Survey Respondents and their Children and Families

Respondent	Number	%	Family/Child	Number	%	Early Childhood Program	Number	%	
<i>Age (Years)</i>			<i>Ethnicity</i>			<i>Service Delivery Location</i>			
<20	81	3	African American/African Descent	274	8	Home-based	730	22	
20–30	1410	43	American Indian/Native Alaskan	171	5	Center-based	1893	58	
30–40	1333	41	Asian	47	2	Combination Home/Center	563	17	
40+	391	12	Caucasian	1771	54	Other	95	3	
<i>Education (Yrs. Completed)</i>			<i>Pacific Islander/Hawaiian</i>			<i>Program Type</i>			
<6 (Grade School)	52	2	Middle Eastern Region	152	5	Part C (619)	955	29	
6–11 (Some Secondary School)	493	15	Biracial/Multiracial	21	1	Part B (619)	303	9	
12 (High School)	1318	40	Other	238	7	Part C/B	468	14	
13–15 (Some College)	836	25	<i>Economic Status</i>			Early Head Start/Head Start	1385	42	
16+ (College Graduate)	523	16	Marginal	95	3	Combination	118	4	
<i>Marital Status</i>			<i>Borderline</i>			<i>Hours of Child Services Per Week</i>			
Married/Living with Partner	2381	72	Not Marginal	1182	36	<1	130	4	
Single	459	14	<i>Child Age (Months)</i>			1–2	716	22	
Divorced/Separated/Widowed	412	13	0–12	1479	45	2–5	538	16	
			12–24	572	17	5–10	328	10	
			24–36				10–20	765	23
			36–48				20–40	662	20
			48–60						
			60–72						
			<i>Child Disability</i>						
			Disabled/Delayed	1632	50				
			At-Risk	1597	49				

NOTE. Some percentages do not add up to 100% because of missing data.

results. In each analysis, the variances of the 11 factors were set to 1.0 following procedures described in Bentler (1995) to both establish a scale for each factor in the model and produce parameter estimates for each survey item. Procedures described in Byrne (1994) and Hoyle (1995) were used to modify the initial models to improve fit. This involved reassignment of four items on each survey (see Results section) to different factors and the correlation of error terms that were substantively justified (Lagrange Multiplier Test).

Three sets of statistics were considered in each analysis. The first were the fit statistics for ascertaining the correspondence between the hypothesized and observed data. The three adjunct fit indices (comparative fit index, normed fit index, and nonnormed fit index) produced by EQS (Bentler, 1995) measure the association between the “fit of a specified model and the fit of an independence, or null, model” (Hoyle, 1995, p.7). The second were the standardized structure coefficients. These coefficients are the parameter estimates of the effect sizes associated with individual survey items (the closer a coefficient is to 1.0, the stronger the relation to the learning activity category; Hayduk, 1988). The third were tests of the statistical significance of each structure coefficient. Following convention, a *z* score indicating that a parameter estimate was two or more standard deviations away from zero was used as the criterion for ascertaining a statistically significant effect size.

RESULTS

Family Surveys

Table 2 shows the findings from the data analyses of the family surveys. The CFA model tested included the reassignment of *eating meals* to parenting routines from child routines, *family meetings* to family rituals from socialization activities, and *riding bike/wagon* and *playing ball games* to physical play from play activities. The comparative fit index (CFI) and both the Bentler-Bonett normed (NFI) and nonnormed (NNFI) fit indices for the final model were between .82 and .85, in-

dicating an adequate fit between the model and the data.

The CFA standardized structure coefficients in Table 2 are the parameter estimates of the effect sizes for individual activity settings. All but two activity setting structure coefficients were equal to or greater than .40. Every structure coefficient had a *z* statistic indicating the effect size was more than four standard deviations away from zero. The major categories of activity settings may be taken as evidence that family life is made up of overlapping but distinct sources of learning experiences and opportunities. The results are best understood by focusing attention on the 11 categories of home and family activities as the sources of learning opportunities, and the specific activity settings within each category as only examples of kinds of situated learning that a child may experience. It is worth remembering that the 50 items on the survey were selected from a much larger pool of activities serving as the contexts for children’s learning. As measurement theory emphasizes, interchangeable indicators (activity settings) could be used as items representing different concepts, constructs, or in the case here, activity setting categories (Babbie, 1995).

Community Surveys

The findings from the analyses of the community surveys are shown in Table 3. Four activity setting items were reassigned to improve model fit. *Library/book mobile* was moved to art/entertainment activities from community activities, *recreation/community centers* was moved to recreational activities from children’s attractions, *children’s museums/science centers* was moved to art/entertainment activities from children’s attractions, and *parent/child classes* was moved to play activities from clubs and organizations. The comparative fit index (CFI) and both the Bentler-Bonett normed (NFI) and nonnormed fit indices (NNFI) for the final model were between .83 and .86.

The effect sizes for the structure coefficients were all .40 or higher with one exception. The *z* statistics for every effect size was

Table 2.

First-Order Confirmatory Factor Analysis Categorizing Home and Family Activities Serving as Sources of Children's Learning Opportunities

Category/Activities	Standardized Structure Coefficients	z Statistics	Category/Activities	Standardized Structure Coefficients	z Statistics
<i>Family Routines</i>			<i>Play Activities</i>		
Household Chores	.68	29.93	Art Activities/Drawing	.76	34.10
Cooking/Preparing Meals	.64	28.04	Playing Board Games	.67	29.53
Caring for Pets/Animal	.54	22.88	Playing Video Games	.49	20.27
Doing Errands	.53	21.93	<i>Entertainment Activities</i>		
Food Shopping	.52	21.58	Dancing/Singing	.68	26.92
<i>Parenting Routines</i>			Listening to Music	.58	22.49
Child's Bathtime	.60	24.58	Watching TV/Videos	.43	16.37
Child's Bedtime/Naptime	.59	24.02	Playing Alone	.32	11.86
Child's Wake-Up Times	.57	22.97	<i>Family Rituals</i>		
Meal Times	.56	22.40	Family Talks	.71	30.25
Fixing/Cutting Child's Hair	.54	21.72	Saying Grace at Meals	.70	29.90
<i>Child Routines</i>			Religious/Spiritual Readings	.69	29.62
Brushing Teeth	.73	33.44	Praying	.65	26.80
Washing Hands/Face	.72	33.03	Family Meetings	.52	20.54
Cleaning Up Room	.69	30.83	<i>Family Celebrations</i>		
Picking Up Toys	.68	30.45	Holiday Dinners	.71	31.32
Toileting/Going to Bathroom	.68	30.59	Family Member's Birthdays	.68	29.75
Dressing/Undressing	.53	22.56	Decorating Home (Holidays)	.67	29.32
<i>Literacy Activities</i>			<i>Socialization Activities</i>		
Reading/Looking at Books	.64	27.57	Family Gatherings	.61	25.55
Telling Child Stories	.61	25.56	Picnics	.59	24.59
Adult/Child Play Times	.58	24.27	Having Friends Over to Play	.55	22.57
Taking Walks/Strolls	.55	22.68	Visiting Neighbors	.44	17.78
Bedtime Stories	.54	22.24	Sleepovers	.40	16.05
People Coming/Going (Hellos/Good-byes)	.54	22.04	<i>Gardening Activities</i>		
Cuddling with Child	.50	20.25	Doing Yard Work	.79	35.06
<i>Physical Play</i>			Planting Trees/Flowers	.75	33.00
Riding Bike/Wagon	.61	25.19	Growing Vegetable Garden	.60	24.47
Playing Ball Games	.58	23.84			
Water Play/Swimming	.46	18.41			
Rough Housing	.38	15.35			

NOTE. All z statistics are significant beyond the .0001 level.

four or more standard deviations away from zero. The results from the community surveys indicate that sources of children's learning opportunities in the context of community life are quite varied, and that there are many different kinds of learning opportunities avail-

able as part of participation in community activity settings. As before, the results from the community surveys are best understood by focusing on the 11 major categories of activity settings as sources of children's learning activities, where the survey items are examples

Table 3.

First-Order Confirmatory Factor Analysis Categorizing Community Activities Serving as Sources of Children's Learning Opportunities

Category/Activities	Standardized		Category/Activities	Standardized	
	Structure Coefficients	<i>z</i> Statistics		Structure Coefficients	<i>z</i> Statistics
<i>Family Excursions</i>			<i>Recreational Activities</i>		
Family Activities	.75	30.81	Fishing	.53	21.08
Weekend Activities	.74	30.62	Recreation/Community Centers	.53	20.89
Car Rides/Bus Rides	.50	18.82	Swimming	.53	20.63
Doing Errands	.42	15.78	Ice Skating/Sledding	.48	18.72
			Horseback Riding	.41	15.61
<i>Family Outings</i>			<i>Children's Attractions</i>		
Eating Out	.59	21.80	Animal Farms/Petting Zoos	.72	30.44
Going Shopping (Mall)	.57	21.03	Parks/Nature Reserves	.70	29.53
Visiting Friends	.52	19.12	Zoos/Animal Reserves	.69	28.59
Family Reunions	.41	14.68	Pet Stores/Animal Shelters	.64	26.41
			Nature Centers	.58	23.63
<i>Play Activities</i>			<i>Art/Entertainment Activities</i>		
Outdoor Playgrounds	.72	29.45	Children's Museums/Science Centers	.70	29.72
Indoor Playgrounds	.62	24.74	Music Concerts/Children's Theater	.66	27.41
Child Play Groups	.61	24.43	Library/Book Mobiles	.60	24.24
Playing Arcade Games	.40	15.07	Storytellers	.47	18.44
Parent/Child Classes	.38	13.85	Music Activities	.44	17.04
<i>Community Activities</i>			<i>Church/Religious Activities</i>		
Community Celebrations	.68	28.27	Religious Activities	.86	38.44
Children's Festivals	.63	25.91	Going to Church	.82	36.50
County/Community Fairs	.59	23.89	Sunday School	.73	31.12
Parades	.57	22.67			
Hay Rides	.44	17.00	<i>Organizations/Groups</i>		
			Children's Clubs (4H, Indian Guides)	.67	24.90
<i>Outdoor Activities</i>			Karate/Martial Arts	.62	22.90
Hiking	.64	25.32	Scouting	.57	20.96
Nature Trail Walks	.61	23.90	Gymnastics/Movement Classes	.42	15.01
Boating/Canoeing	.54	20.94	<i>Sports</i>		
Camping	.54	20.98	Baseball/Basketball	.76	26.44
Community Gardens	.54	20.83	Soccer/Football	.69	24.62
Rafting/Tubing	.52	19.89			
Hunting	.41	15.29			

NOTE. All *z* statistics are significant beyond the .0001 level.

of the kinds of activity settings and learning opportunities that occur within the categories.

DISCUSSION

Taken together, the findings from the two surveys indicate that family and community life is made up of more than 20 relatively distinct and unique categories of activity settings. As

previous research has shown, the various kinds of activity settings on the surveys constitute major sources of children's learning opportunities and experiences (e.g., Dyck, 1992; Ehrmann et al., 1995; Gallimore, Weisner, et al., 1993; Gallimore et al., 1989; Göncü, 1999; Rogoff et al., 1993). As a result of the particular methodology and approach used in

the studies, one can reasonably conclude that any one child would likely experience situated learning in most if not all of the activity setting categories as a result of the opportunities afforded the child during the infancy, toddler, and preschool periods of development. The specific activities experienced for individual children, however, would be expected to be quite different, and vary as a function of such factors as cultural and socioeconomic backgrounds, and place of residence (see e.g., Beckman et al., 1998; Blum-Kulka, 1997; Göncü, 1999; Labrell, 1996; Minami & McCage, 1995; Rogoff et al., 1991; Toyama & Muto, 1990).

Specific examination of the *family activity setting* categories, and the examples of the specific contexts of children's learning, finds that they are an interesting mix of adult activities in which a child becomes a participant (family routines, gardening activities), activities acquiescing a child to daily chores (parenting activities), activities enabling child acquisition of social-adaptive competencies (child routines), activities bringing children in contact with other children and adults (socialization activities), activities having special family meaning (family rituals and celebrations), activities providing children opportunities to practice emerging capabilities and learn new competencies (physical play and literacy activities), and activities providing a context for expressing interest-based child abilities (play and entertainment activities). As is evident from these findings, the experiences making up the fabric of family life affording developing children learning opportunities are quite varied, and constitute rich arrays of experiences for situated learning of various sorts.

Community activity setting categories also are a rich mix of children's learning opportunities afforded through adult-oriented activities (outdoor activities), family-oriented activities (family excursions and outings), child-oriented activities (play activities), activities that bring children in contact with other children and adults (organizations/groups and church-related activities), activities that include structured (arts/entertainment activities)

as well as unstructured (children's attractions) learning experiences, activities that involve children in events that are culturally meaningful and community enmeshing (community activities), and activities that involve other children of varying skill levels (recreation and sports activities). It is worth emphasizing that many community activities are ones that bring young children in contact with others or which involve them in activities providing an array of experiences where an intent-to-teach is noticeably absent, but which nonetheless have development-enhancing effects. For example, experiences such as going along on errands with a parent, going to karate classes with an older sibling, or going to the library with big sister open up possibilities for all kinds of naturally occurring learning opportunities.

Overall, the 22 categories of activity settings/learning opportunities provide a useful framework for identifying competency-enhancing situated learning experiences making up the fabric of a child's family and community life. We are currently using the categories identified in this study to classify parents' responses to open-ended questions about the family and community activities they consider the most important source of their children's learning experiences and opportunities. Findings indicate that parents indeed identify learning activities in all 22 categories listed in Tables 2 and 3, although there is considerable variability and specificity regarding the activities parents identify as most important.

What we have learned from the research described in this paper, together with findings by other investigators (e.g., Beckman et al., 1998; Bradley, Whiteside, Mundform, & Blevins-Knabe, 1995; Gallimore, Weisner, et al., 1993; Gallimore et al., 1989; Göncü, 1999; Labrell, 1996; Rogoff et al., 1991, 1993), has direct implications for understanding, defining, and operationalizing the natural environment provision of Part C of the Individuals with Disabilities Education Act (IDEA) Amendments of 1997 (P. L. 105-17). Our concluding comments are limited to a discussion of what we see as a pathway to adoption and use of evidence-based practices for increasing the use of

family and community activity settings as natural learning environments.

IDEA 97 includes the statement that early intervention services are “provided in natural environments, including the home, and community settings in which children without disabilities participate” [Section 632(a)(16G)]. As is almost always the case, the federal legislation provides very little guidance about what natural environments specifically are, or are not. No doubt, this has led to confusion and misunderstanding about what constitutes natural (learning) environments. For example, it is not atypical to hear natural environments described as places (child’s home, childcare programs, etc.), or to hear that children with and without disabilities or delays must be present together for a setting to be a natural environment. Evidence argues against both interpretations.

First, natural learning environments are not places but rather the experiences afforded children in the context of activity settings that make up the fabric of family and community life. As noted in the introduction, locations are sources of many different kinds of activity settings, and activity settings are the sources of many different kinds of situated learning opportunities. Consequently, natural learning environments are best described and understood in terms of their major categories (Tables 2 and 3) and specific kinds of learning opportunities and activities afforded within categories. That is, natural environments are the everyday activity settings that occur as part of family and community life, where the rich array of activity settings experienced by a child in these settings are the principal sources of natural learning opportunities. Conceptualizing natural learning environments in this way cannot be but more informative for intervention purposes, especially when one knows the particular kinds of activities having development-enhancing qualities and consequences (Bronfenbrenner, 1992).

Second, defining natural learning environments as necessitating the joint presence of children with and without disabilities or delays is limited and not consistent with research evidence. Inspection of Tables 2 and 3 shows,

for example, that a good number of activity settings/learning opportunities are ones that would not (necessarily) include children without disabilities or delays, yet would provide varying contexts for situated learning. A major finding from our research and practice (Dunst, in press; Dunst et al., 1998; Umstead et al., 1995) as well as that of others (e.g., Dyck, 1992; Gallimore, Weisner, et al., 1993; Gallimore et al., 1989; Kellegrew, 1994; Labrell, 1996; Lancy, 1996; Rogoff et al., 1991, 1993; Stremel et al., 1992) indicates that the learning opportunities of young children with and without disabilities, which have development-enhancing effects, often involve participation in activity settings as part of family and community life not including other children. Consequently, inclusion experiences and opportunities (Beckman et al., 1998) need to be considered as only one kind of natural learning environment (Dunst, in press).

Besides these two points, there is evidence that conceptualizing early intervention in natural learning environments solely as early intervention services *provided* by qualified personnel in natural environments [P. L. 105–17, Section 632 (F) (G)] is both limited and limiting as well. This is the case because child participation in activity settings that have development-enhancing qualities and consequences is early intervention in the broadest sense of the term (Dunst, 1985, 1999, in press; Trivette et al., 1997), even when it does not involve specially trained early childhood professionals directly providing children learning opportunities. A better, more ecologically accurate definition of early intervention is one that includes both naturally occurring and planned learning activities provided in the context of natural learning environments (activity settings). In this expanded perspective of natural environments and children’s learning, the roles of early intervention practitioners expand to include the use of learning opportunities afforded by others as well as those provided by practitioners themselves as a way of promoting child competence. This particular conceptualization makes intuitive sense and cannot but result in a richer array of learn-

ing opportunities influencing child development.

REFERENCES

- Babbie, E. (1995). *The practice of social research*. (7th ed.). Belmont, CA: Wadsworth.
- Ballard, K. D. (1986). Child learning and development in context: Strategies for analysing behaviour-environment interactions and a proposal for research into everyday experiences. *Educational Psychology, 6*, 123–137.
- Beckman, P., Barnwell, D., Horn, E., Hanson, M., Guitierrez, S., & Lieber, J. (1998). Communities, families and inclusion. *Early Childhood Research Quarterly, 13*, 125–150.
- Bentler, P. (1995). *EQS structural equation modeling manual*. Encino, CA: Multivariate Software.
- Bernheimer, L. P., Gallimore, R., & Weisner, T. S. (1990). Ecocultural theory as a context for the individualized family service plan. *Journal of Early Intervention, 14*, 219–233.
- Blum-Kulka, S. (1997). *Dinner talk*. Mahwah, NJ: Erlbaum.
- Bowman, P. (1993). The impact of economic marginality among African American husbands and fathers. In H. P. McAdoo (Ed.), *Family ethnicity: Strength in diversity* (pp. 120–137). Thousand Oaks, CA: Sage.
- Boyce, W. T., Jensen, E. W., Cassel, J. C., Collier, A. M., Smith, A. H., & Ramsey, C. T. (1977). Influence of life events and family routines on childhood respiratory tract illness. *Pediatrics, 60*, 609–615.
- Boyce, W. T., Jensen, E. W., James, S. A., & Peacock, J. L. (1983). The family routines inventory: Theoretical origins. *Social Science and Medicine, 17*, 193–200.
- Bradley, R. H., Whiteside, L., Mundform, D. J., & Blevins-Knabe, B. (1995). Home environment and adaptive social behavior among premature, low birth weight children: Alternative models of environment action. *Journal of Pediatric Psychology, 20*, 347–362.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (1992). Ecological systems theory. In R. Vasta (Ed.), *Six theories of child development: Revised formulations and current issues* (pp. 187–248). Philadelphia: Jessica Kingsley.
- Bucy, J. E. (1995). An exploratory study of family rituals, parenting stress and developmental delay in early childhood. (Doctoral dissertation, University of North Carolina at Chapel Hill, 1995). *Dissertation Abstracts International, 57*, DA9616153.
- Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows: Basic concepts, applications, and programming*. Thousand Oaks, CA: Sage.
- Cole, M. (1996). *Cultural psychology*. Cambridge, MA: Harvard University Press.
- Dunst, C. J. (1985). Rethinking early intervention. *Analysis and Intervention in Developmental Disabilities, 5*, 165–201.
- Dunst, C. J. (1997, May). *Building community resources project: Year 3 progress report*. Asheville, NC: Orelena Hawks Puckett Institute.
- Dunst, C. J. (1999). *Mapping community learning opportunities for young children and their families*. Manual in preparation.
- Dunst, C. J. (in press). Participation of young children with disabilities in community learning activities. In M. Guralnick (Ed.), *Early childhood inclusion: Focus on change*. Baltimore: Brookes.
- Dunst, C. J., & Bruder, M. B. (1999). Increasing children's learning opportunities in the context of family and community life. *Children's Learning Opportunities Report, Vol. 1, No. 1*.
- Dunst, C. J., Bruder, M. B., Trivette, C. M., Raab, M., & McLean, M. (1998, May). *Increasing children's learning opportunities through families and communities early childhood research institute: Year 2 progress report*. Asheville, NC: Orelena Hawks Puckett Institute.
- Dunst, C. J., Bruder, M. B., Trivette, C. M., Raab, M., Hamby, D., & McLean, M. (in press). *Natural learning environments for infants, toddlers and preschoolers. Young Exceptional Children*.
- Dyck, I. (1992). The daily routines of mothers with young children: Using a sociopolitical model in research. *Occupational Therapy Journal of Research, 12*, 16–34.
- Ehrmann, L. C., Aeschleman, S. R., & Svanum, S. (1995). Parental reports of community activity patterns: A comparison between young children with disabilities and their nondisabled peers. *Research in Developmental Disabilities, 16*, 331–343.
- Farver, J. A. M. (1999). Activity setting analysis: A model for examining the role of culture in development. In A. Göncü (Ed.), *Children's engagement in the world: Sociocultural perspectives* (pp. 99–127). Cambridge, England: Cambridge University Press.
- Gallimore, R., Goldberg, C. N., & Weisner, T. S. (1993). The social construction and subjective

- reality of activity settings: Implications for community psychology. *American Journal of Community Psychology*, 21, 537–559.
- Gallimore, R., Weisner, T. S., Bernheimer, L. P., Guthrie, D., & Nihira, K. (1993). Family responses to young children with developmental delays: Accommodation activity in ecological and cultural context. *American Journal on Mental Retardation*, 98, 185–206.
- Gallimore, R., Weisner, T. S., Kaufman, S. Z., & Bernheimer, L. P. (1989). The social construction of ecocultural niches: Family accommodation of developmentally delayed children. *American Journal on Mental Retardation*, 94, 216–230.
- Göncü, A. (Ed.). (1999). *Children's engagement in the world: Sociocultural perspectives*. Cambridge, England: Cambridge University Press.
- Guralnick, M. J. (Ed.). (1997). *The effectiveness of early intervention: Directions for second generation research*. Baltimore: Brookes.
- Hanks, W. (1991). Forward. In J. Lave & E. Wenger (Eds.), *Situated learning: Legitimate peripheral participation* (pp. 13–24). New York: Cambridge University Press.
- Hayduk, L. (1988). *Structural equation modeling with LISREL*. Baltimore: The Johns Hopkins University Press.
- Heath, R., Levin, P., & Tibbits, K. (1993). Home environment profile. In R. N. Roberts (Ed.), *Coming home to preschool: The sociocultural context of early education* (pp. 125–132). Norwood, NJ: Ablex.
- Hoyle, R. (1995). The structural equation modeling approach: Basic concepts and fundamental issues. In R. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 1–36). Thousand Oaks, CA: Sage.
- Kellegrew, D. H. (1994). The impact of daily routines and opportunities on the self-care skill performance of young children with disabilities. (Doctoral dissertation, University of California, Santa Barbara, 1994). *Dissertation Abstracts International*, 56, DA9522802.
- Koegel, L. K., Koegel, R. L., Kellegrew, D., & Mullen, K. (1996). Parent education for prevention and reduction of severe problem behaviors. In L. K. Koegel, R. K. Koegel, & G. Dunlap (Eds.), *Positive behavioral support: Including people with difficult behavior in the community* (pp. 3–30). Baltimore: Brookes.
- Labrell, F. (1996). Paternal play with toddlers: Recreation and creation. *European Journal of Psychology of Education*, 11, 43–54.
- Lancy, D. R. (1996). *Playing on the mother ground: Cultural routines for children's development*. New York: Guilford Press.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- McCubbin, H. I., McCubbin, M. A., & Thompson, A. I. (1987). Family time and routines index. In H. I. McCubbin & A. I. Thompson (Eds.), *Family assessment inventories for research and practice* (pp. 133–141). Madison: University of Wisconsin.
- McLoyd, V., Jayaratne, T. E., Ceballo, R., & Borquez, J. (1994). Unemployment and work interruption among African American single mothers: Effects on parenting and adolescent socioemotional functioning. *Child Development*, 65, 562–589.
- McWilliam, R. A. (1996). *Family-centered intervention planning: A routines-based approach*. San Antonio, TX: Communication/Therapy Skill Builders.
- Minami, M., & McCage, A. (1995). Rice balls and bear hunts: Japanese and North American family narrative patterns. *Journal of Child Language*, 22, 423–445.
- O'Donnell, C. (1992). The interplay of theory and practice in delinquency prevention: From behavior modification to activity settings. In J. McCord & R. Tremblay (Eds.), *Preventing antisocial behavior: Interventions from birth through adolescence* (pp. 209–232). New York: Guilford Press.
- O'Donnell, C. R., Tharp, R. G., & Wilson, K. (1993). Activity settings as the unit of analysis: A theoretical basis for community intervention and development. *American Journal of Community Psychology*, 21, 501–520.
- Rogoff, B., Mistry, J., Göncü, A., & Mosier, C. (1991). Cultural variation in the role relations of toddlers and their families. In M. Bornstein (Ed.), *Cultural approaches to parenting* (pp. 173–183). Mahwah, NJ: Erlbaum.
- Rogoff, B., Mistry, J., Göncü, A., & Mosier, C. (1993). Guided participation in cultural activities by toddlers and caregivers. *Monographs of the Society for Research in Child Development*, 58(8, Serial No. 236).
- Sprunger, L., Boyce, W. T., & Gaines, J. A. (1985). Family-infant congruence: Routines and rhythmicity in family adaptations to a young infant. *Child Development*, 56, 564–572.
- Stremel, K., Matthews, P., Wilson, R., Molden, R., Yates, C., Busbea, B., & Holston, J. (1992, December). *Facilitating infant-toddler skills in family-child routines*. Paper presented at the Council for Exceptional Children/Division of Early Childhood International Conference on Children with Special Needs, Washington, DC.
- Toyama, N., & Muto, T. (1990). Mother-toddler in-

teraction in a meal time. *Japanese Journal of Educational Psychology*, 38, 395–404.

Trivette, C. M., Dunst, C. J., & Deal, A. G. (1997). Resource-based approach to early intervention. In S. K. Thurman, J. R. Cornwell, & S. R. Gotwald (Eds.), *Contexts of early intervention: Systems and settings* (pp. 73–92). Baltimore: Brookes.

Tudge, J., Hogan, D., Lee, S., Tammeveski, P., Meltsas, M., Kulakova, N., Snezhkova, I., & Putnam, S. (1999). Cultural heterogeneity: Parental values and beliefs and their preschoolers' activities in the United States, South Korea, Russia, and Estonia. In A. Göncü (Ed.), *Children's engagement in the world: Sociocultural perspectives* (pp. 62–96). Cambridge, England: Cambridge University Press.

Umstead, S., Boyd, K., & Dunst, C. J. (1995). Building community resources: Enabling inclusion in community programs and activities. *Exceptional Parent*, 25(7), 36–37.

Wertsch, J. (Ed.). (1985). *Culture, communication, and cognition: Vygotskian perspectives*. New York: Cambridge University Press.

This research was supported by funding from the U.S. Department of Education, Office of Special Education Programs, Early Education Program for Children with Disabilities (HO24S960008). The opinions expressed, however, do not necessarily reflect the official position or policy of the U.S. Department of Education.

Appreciation is extended to Anne Taylor, Erin Saleeby, Carrienne Wilson, and Jimmi Brown for coding the surveys, and Carolyn Brooks Coppola for typing the manuscript. Special thanks to the early childhood program directors and staff who assisted with family recruitment, and the study participants for their contributions to our understanding of family and community life.

Address correspondence to Carl J. Dunst, Ph.D., Orelena Hawks Puckett Institute, 18A Regent Park Blvd., Asheville, NC 28806. E-mail: dunst@puckett.org