Psychological Reports, 2005, 96, 239-242.

UNIVERSITY FACULTY PREPARATION OF STUDENTS IN USING NATURAL ENVIRONMENT PRACTICES WITH YOUNG CHILDREN[1]

CARL J. DUNST

Orelena Hawks Puckett Institute
Asheville, North Carolina

MARY BETH BRUDER

University of Connecticut Health Center
Farmington, Connecticut

Summary.—155 university faculty teaching students in physical therapy, occupational therapy, speech and language pathology, early childhood special education, or multidisciplinary studies programs were surveyed to assess how the students were taught how to use everyday family and community activities as natural learning opportunities for young children. Analysis showed that the faculty provided very little training in using community activity settings as contexts for children's learning and that physical therapy faculty provided less training in using natural environments as sources of children's learning opportunities than faculty in the other disciplines.

Constructivist theorists (Fosnot, 1996) hypothesize that learners' understanding of any subject matter is the result of complex interactions between prior understandings and the experiences afforded learners. At least one set of experiences that influence knowledge and understanding are the different frames of reference college students experience as part of their formal university education.

The purpose of this study was to ascertain whether faculty teaching students in different professional disciplines taught like or unlike perspectives of natural learning environments as part of training students to work with infants and toddlers and their families. Natural environments are the everyday family and community activities which provide the physical and social contexts for informal child learning. These everyday activities include such things as parent and child lap games (e.g., peek-a-boo), meal times, dressing and undressing, digging in sand or dirt, playing in a tub of water, etc.

The study was conducted as part of a line of research and practice investigating professionals' understanding and use of natural environments as sources of everyday learning opportunities (Raab & Dunst, 2004; Bruder & Dunst, in press). Natural environments is the term used in the Part C Early Intervention Program of the Individuals With Disabilities Education Act (1997) to refer to settings that are natural or typical for infants and toddlers without developmental disabilities or delays and which are the contexts for naturally occurring learning opportunities (Dunst & Bruder, 1999).

[1]This research was supported by a cooperative agreement with the U.S. Department of Education, Office of Special Education Programs, Research to Practice Division (HO24S96008). Send correspondence to Carl J. Dunst, Ph.D., Orelena Hawks Puckett Institute, 18A Regent Park Blvd., Asheville, NC 28806 or e-mail (dunst@puckett.org).

Method

Participants were 155 higher education faculty teaching courses in occupational therapy ($n=44$), physical therapy ($n=38$), early childhood special education ($n=31$), speech and language pathology ($n=28$), or multidisciplinary studies ($n=14$). Each faculty member was from a different university and was identified as a person who taught classes on infants and toddlers with developmental disabilities or delays.

The participating faculty were asked as part of a larger study of personnel preparation in recommended early childhood intervention and therapy practices six questions about how much they provided training in using everyday activity as contexts for child learning opportunities (natural learning environments). The six items were organized into three sets of practices with two items per category (Appendix, p. 242). Respondents rated the items on a 5-point scale anchored by 1: does not teach and 5: teaches a great deal. The average score in each category was used as the dependent measure in a 5 Between Type of Personnel Preparation Program (Occupational Therapy vs Physical Therapy vs Early Childhood Special Education, etc.) × 3 Within Type of Practice (see Appendix, p. 242) analysis of variance for judging similarities and differences in faculty training in the three types of practices. Cohen *d* effect sizes (ES) were calculated to assess the magnitude of effect of the differences between faculty ratings.

Results

Findings showed main effects for both type of training program ($F_{4,150}=3.71$, $p<.01$) and type of practice ($F_{2,300}=52.93$, $p<.0001$). Faculty teaching physical therapy students provided less training in natural learning environment practices than faculty in the other disciplines ($F_{1,150}$s = 4.62 to 13.18, ps < .05 to .001, ES = .49 to .71), as well as faculty in multidisciplinary studies programs ($F_{1,150}=2.09$, $p>.05$, ES = .39). More specifically, faculty teaching physical therapy students provided less training in using family activity settings ($F_{1,150}$s = 4.24 to 19.89, ps < .05 to .001) and community activity settings ($F_{1,150}$s = 4.71 to 11.16, ps < .05 to .01) as contexts for therapy than faculty in other disciplines. The ES for the score means for the physical therapy faculty vs the score means for the faculty of the other disciplines ranged from .26 to .98 for practices in the family activity setting and .70 to .82 for those in the community activity setting.

In further analysis faculty as a group provided less training in using community activity settings as contexts for intervention ($M=3.3$, $SD=0.9$) than training in either assessment and intervention practices ($M=3.8$, $SD=0.8$) or using family activity settings as sources of child learning opportunities ($M=4.0$, $SD=0.9$; $F_{1,150}$s = 34.18 and 101.91, $p<.0001$, ES = .46 and .74, respectively). Also faculty provided less training in natural environment as-

TABLE 1
MEANS AND STANDARD DEVIATIONS FOR USING NATURAL LEARNING ENVIRONMENT PRACTICES

Type of Personnel Preparation Program		Practice		
		Assessment/ Intervention	Family Activity Settings	Community Activity Settings
Early Childhood Special Education	*M*	3.8	4.1	3.6
	SD	0.9	1.0	1.0
Occupational Therapy	*M*	3.7	4.3	3.5
	SD	0.9	0.8	1.0
Multidisciplinary	*M*	4.0	3.8	3.4
	SD	0.8	1.0	0.9
Speech/Language Pathology	*M*	3.7	4.0	3.4
	SD	0.9	0.8	0.8
Physical Therapy	*M*	3.5	3.6	2.9
	SD	0.8	0.7	0.8
$F_{4,150}$		1.88	4.14*	3.69*

*$p < .01$.

sessment and intervention practices than use of family activity settings as contexts for child learning ($F_{1,150} = 18.85$, $p < .0001$, ES = .30).

DISCUSSION

Analysis showed that faculty in five professional development programs provided differential training in those aspects of natural environment practices constituting the focus of this investigation. More specifically, faculty provided minimal training in using everyday community activities as sources of natural learning opportunities. Further inspection of the data showed that 20% of the faculty as a group provided no or very little training, and 40% of the faculty as a group provided only some training in community activity setting practices. Closer inspection of the physical therapy program faculty data indicated that 34% provided no or very little training and 46% provided only some training in using community activity settings as contexts for improving child functioning.

We noted earlier that the experiences afforded students by their professors as part of their formal university training are likely to contribute to their knowledge and understanding of how to work with infants and toddlers with developmental disabilities or delays. The importance of the study described here is the measure of emphasis of such particular kinds of practices. Faculty clearly placed little emphasis on community activities as contexts for early childhood intervention and therapy. This seems problematic in light of recent research indicating that young children's participation in community activity settings is positively related to a number of aspects of child and parent functioning (Trivette, Dunst, & Hamby, 2004). Consequently, students may not be receiving training in certain aspects of evidence-based practices we have studied.

REFERENCES

BRUDER, M. B., & DUNST, C. J. (in press) Personnel preparation in recommended early intervention practices: degree of emphasis across disciplines. *Topics in Early Childhood Special Education*.

DUNST, C. J., & BRUDER, M. B. (1999) Family and community activity settings, natural learning environments, and children's learning opportunities. *Children's Learning Opportunities Report*, 1(2), 1-2.

FOSNOT, C. T. (1996) Constructivism: a psychological theory of learning. In C. T. Fosnot (Ed.), *Constructivism: theory, perspectives, and practice*. New York: Teachers College Press. Pp. 8-33.

INDIVIDUALS WITH DISABILITIES EDUCATION ACT [IDEA]. Amendments, 20 U.S.C. §1400 *et seq.* (1997)

RAAB, M., & DUNST, C. J. (2004) Early intervention practitioner approaches to natural environment interventions. *Journal of Early Interventions*, 27, 15-26.

TRIVETTE, C. M., DUNST, C. J., & HAMBY, D. (2004) Sources of variation in and consequences of everyday activity settings on child and parenting functioning. *Perspectives in Education*, 22(2), 17-35.

Accepted February 1, 2005.

APPENDIX

NATURAL LEARNING ENVIRONMENT SURVEY ITEMS

Practice	Item
Assessment and Intervention	Assessment practices identify family-desired everyday natural learning environments and opportunities
	Intervention practices promote and mediate parents' use of natural learning environments
Everyday Family Activity	Interventions are implemented in the context of family-identified home routines, e.g., meal times
	Intervention practices encourage child participation in everyday family routines
Everyday Community Activity	Intervention practices are implemented in family-identified community activities, e.g., grocery shopping
	Intervention practices encourage the identification and use of community activity settings as natural learning environments, e.g., playgrounds