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ABSTRACT

This chapter is part of a book that recounts the year's work at the Early Childhood Development Center (ECDC) at Texas A & M University-Corpus Christi. Rather than an "elitist" laboratory school for the children of university faculty, the dual-language ECDC is a collaboration between the Corpus Christi Independent School District and the university, with an enrollment representative of Corpus Christi's population. The chapter details a study providing a descriptive account of practices in five early elementary classrooms in the ECDC wherein developmentally appropriate practice (DAP) principles have been the focus of curriculum development and teacher inservice training. Three specific prescriptive components of DAP were explored in the study: age appropriateness, individual appropriateness, and center-based instruction. The extent to which these three prescriptive practices were a part of the daily reality in the observed classrooms was assessed through non-obtrusive observational methods. Findings revealed that even within a setting specifically designed to facilitate developmentally appropriate education, there was substantial variation surrounding major themes and teaching strategies. A lack of understanding about the specific tools for promoting developmentally appropriate environments remains the major challenge for teacher education programs. (EV)

Chapter 4

What's Appropriate About Developmentally Appropriate Practices? Observing Early Childhood Development Center Classroom Environments

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Background

Research on effective schools shows that teachers who use a variety of methodological strategies promote the skills of their students most efficiently. Because children's backgrounds, experiences, socialization, and learning styles are so different, any one method is likely to succeed with some children and fail with others. All individuals who are involved in the education of young children—teachers, administrators and parents—are responsible for ensuring that practices are developmentally appropriate. Unfortunately many educators are not sufficiently familiar with developmentally appropriate practices for very young children. This lack of understanding about the practices that best promote child development results from the failure of early childhood professionals to articulate clearly their practices and the research-based criteria for why they do what they do.

In an effort to more clearly define developmentally appropriate practice and programs, the National Association for the Education of Young Children (NAEYC) describes the three most important aspects of developmentally appropriate practice as being those which (a) are appropriate for the child's age, (b) are appropriate for the individuality of the child, and (c) respect an understanding of the child's culture (Bredekamp & Copple, 1997). Further, Morrison (2001) states, "Quality programs use developmentally appropriate practices to implement the curriculum and achieve their program goals (p. 252)." These fundamental tenets undergird the basis for developmentally appropriate practices for young children.

According to the National Association for the Education of Young Children, "The principle of developmentally appropriate practices (DAP) is that the younger the children and the more diverse their background, the wider the variety of teaching methods and materials required" (Durkin, 1980; Katz & Chard, 1989; Katz, Raths, & Torres, undated, as cited in Bredekamp, 1987). While these practices do not entail any one specific teaching style, guidelines for the conduct of DAP classrooms specify conditions that promote positive learning and are based on research on how children learn.

The developmentally appropriate concept entails the organization of learning environments that reflect both normative and individual expectations of the learner. For example, four-year-olds require active

involvement in their learning. An appropriate environment is one that provides hands-on opportunities with materials, rather than one that requires young children to sit still for long periods of time doing worksheets. Individual appropriateness refers to consideration of children's individual interests, strengths and experiences.

Dunn and Kotos (1997) report that although teachers often espouse the concept of developmentally appropriate practice, they often grapple with its implementation in the classroom. Further, they suggest that more research is needed in the areas of support and implementation of this vital concept.

Research studies consistently report that young children's lives are enhanced when they participate in a program which values and encourages age appropriate, individually appropriate, and culturally appropriate practices. For example, the High Scope (Evans & Meyers, 1994) studies reveal that by age 23, individuals who had participated in DAP education as children were 37.7% less likely to have been arrested for a felony than the individuals who had participated in teacher-directed programs. Further, children from appropriate programs were twice as likely to graduate from college and were more willing to accept responsibility for their actions than those who had not attended quality programs (Schweinhart & Weikart, 1998). A study which compared the arrest records of 1000 at-risk Chicago 18-year-olds confirmed that 26% of the subjects who had not attended a quality three- and four-year-old program had at least one arrest, whereas only 16% of those who had attended a quality three- and four-year-old program had at least one arrest. Only 8% of the group who had attended quality three- and four-year-old programs had two or more arrests while 15% of the other group had two or more arrests (Children's Defense Fund, 2001).

The Children's Defense Fund (2001), a non-profit advocacy group, reports that high quality appropriate early educational experiences have positive effects on the academic performance of all children, but especially of those who are at high risk of school failure. Perhaps one of the most important research projects concerning appropriate practices for young children is the Abecedarian Study (Paciorek & Munro, 2000). Recent reporting suggests that children participating in quality developmentally appropriate programs have significantly higher mental test scores from toddlerhood through age 21 than those who do not participate. Further, mathematics, reading,

and writing achievement scores were consistently higher for those children participating in appropriate programs. In addition, the children in the appropriate programs were significantly more likely to still be in school at age 21 and two times more likely to attend a four-year college. While a significant difference between the children in an appropriate program and those who did not attend such a program was not found, 65% of the children in the appropriate program were employed compared to 50% of the control group.

Developmentally appropriate practice principles were formulated in an age of increasing accountability and evaluation as a response to the widespread use of inappropriate formal teaching techniques for young children and the overemphasis on standardized achievement and achievement testing of narrowly defined academic skills (Texas Education Agency, 1995). In spite of these principles, many early childhood teachers readily employ formal teaching and assessment strategies. Thus, information about specific definitions of principles in practice may help teachers develop alternatives to traditional teaching strategies that nonetheless satisfy demands for accountability.

Focus of the Present Study

A primary goal of this study was to provide a descriptive account of practices in five early elementary classrooms wherein developmentally appropriate practice principles have been the focus of curriculum development and teacher in-service training. Three specific prescriptive components of DAP were explored in this study age appropriateness, individual appropriateness, and center based instruction. Collectively, these components reflected recognition that children's needs are different. The extent to which these three prescriptive practices were a part of the daily reality in the observed classrooms was assessed through non-obtrusive observational methods:

1. Age appropriate curriculum. Curriculum based on expectations formed from research in child development about the regular timing of growth in cognitive, socioemotional and physical development.
2. Individually appropriate curriculum. Curriculum that reflected the fact that each child is a unique person with an individual pattern and timing of growth, as well as an

individual personality, learning style and family background. This curriculum can be planned in accordance with teacher observations, standardized assessments and consultation with parents.

3. Heterogeneous DAP Learning Centers. Curriculum organized around materials that are concrete, real, and relevant to the lives of young children (Bredekamp, 1987) Teachers prepare the environment for children to learn through active exploration and interaction with the materials. Learning activities arranged to maximize individual exploration and task completion at one's own pace.

Method Subjects and Setting

The Early Childhood Development Center (ECDC) on the campus of Texas A&M University-Corpus Christi (TAMUCC) was established in 1996 as a model for best practices in teaching and learning. It was important that approaches developed there be generalizable. Accordingly, participating students were drawn from the population of the large, 42,000 student body of metropolitan school district with the use of a stratified random sampling procedure to ensure representativeness with respect to income and home language use of the overall community population. One hundred and ten (110) students (aged 3 years to 8 years old) were selected from a stratified random lottery selection. Because of the mission of the ECDC, two-thirds of the students were drawn from free/reduced lunch eligible families and the remaining were considered non-free lunch eligible. In addition, a second stratification variable of home language background was used to select 50% of the students from Spanish speaking households and 50% from English dominant households.

Classroom Observations

A series of observation periods were scheduled for each of the five participating classrooms at a university-based early childhood development center educational facility. University students, in coordination with faculty and one graduate student, conducted

observations from an unobtrusive observation deck above the classroom.

Classroom Observation Schedule

A systematic sampling of observation periods was arranged. Observers recorded classroom events during fifteen separate 15-minute blocks randomly scheduled throughout the day. This schedule of observation resulted in a data corpus of 225 minutes per class, for a total of 18.75 hours.

Training of Observers

All observers were current students or past graduates of a university course on developmentally appropriate practices. The students were required as part of their course work to observe several classrooms. The observers were recruited and trained by TAMUCC faculty, the authors of this chapter. Observers were trained in the use of a coding manual derived from criteria defined by Bredekamp (1987). Reliability of coding categories was established by a re-coding of 25% of transcripts. Agreement between independent raters reached 94%.

Coding of Center Based Instruction

In addition to the coding scheme developed for this study, a coding scheme presented in a report of the Texas Education Agency (TEA) (1995) was used to evaluate the existence of teacher-identified centers and their ratings of availability and quality. A trained rater using NAEYC criteria rated these also.
The second author conducted a 'walk through' of each classroom in which teachers:

1. Described the centers available for student use.
2. Noted the availability of the centers throughout the year
3. Rated their own satisfaction with the quality of the center.

In addition to teacher input, the second author compared the centers to those described in TEA (1995) as important components of the learning environment of a truly developmentally appropriate

classroom. The percentage of TEA-endorsed centers available in each classroom and the extent of their availability was recorded.

Coding of Field Notes

Content coding on field notes focused on identifying NAEYC-identified strategies for appropriate practices. The coding categories were taken from TEA (1995). The rationale and coding scheme was adapted from Bredekamp (1987). Table 1 shows the complete coding categories used in the study. The categories are:

A. Developmentally appropriate strategies for teacher/student interaction: A key philosophy in NAEYC concerns students' direction of their own learning. When students direct their own activities they tend to be more engaged and gains tend to be longer lasting.
   1. The classroom environment was rated globally regarding the extent of teacher directed vs. student directed learning.
   2. Interpersonal environment was rated with respect to teacher student verbal and non-verbal interaction.

B. Developmentally appropriate strategies for promoting student academic skills: Three strategies were coded in terms of teacher behavior as it related to promoting student academic skills. Specific definitions were used from TEA (1995):
   1. Encouraging language development.
   2. Encouraging creative expression and appreciation of the arts.
   3. Encouraging children to think reason question and experiment (Mathematics and Science)

C. Developmentally appropriate strategies for establishing a heterogeneously organized learning environment. Center based instruction offers children with a variety of opportunities for discovery learning and social interaction with peers. Center based approaches to education are facilitative of DAP practices as they allow for a diversity of pacing and organization of task difficulty. Measures include:
   1. Percentage of NAEYC Centers available
   2. Teacher rating of center quality

Table 1
Summary of NAEYC Coding

1a. Developmentally appropriate strategy for Teacher/student interaction

A-1 Staff interact frequently with children. Express respect for children — especially during arrival and departure.

A-2 Availability and responsiveness to children — listen to them with attention and respect.

A-3 Speak to children in a friendly and courteous manner—staff ask open-ended questions and speak individually to children.

A-5 Staff foster independence in routine activities like picking up toys and wiping spills.

A-6 Staff use positive guidance techniques: redirection, positive reinforcement, encouragement rather than competition or comparison, no humiliation or frightening discipline techniques.

A-7 Sound of environment is pleasant—spontaneous laughter rather than forced quiet.

A-8 Staff assist children to be comfortable and relaxed in their play and work.

A-9 Foster cooperative play and prosocial behavior.

A-10 Developmentally appropriate exceptions of children's socia behavior.

1b. Developmentally appropriate Strategies for promotin academic/socioemotional skill development

B-7(a) Foster self-concept
Ex. Use children's names in songs
Display children's work
Allow children to make choices
Allow children to initiate activities

B-7(e) Enhance physical development and skills
Ex. Fine Motor activities such as manipulative and a projects

B-7(f) Encourage sound health and nutritional practices
Ex. Cooking activities
Hand washing

B-8 Provide time for children to choose their own activiti during the day. Respect children's right to choose not t participate.

B-9 Facilitate smooth and unregimented transitions betwe activities—Children do not always move as a group a transitions are planned times for learning.

1c. Indicators for use in coding Child-Initiated vs. Adult-Initiated Activitie

Adult Initiated: Adult instructed the child to do this activity in

9

particular way; item/s to be used were chosen for the child and the activities that may be done at this time are predetermined. The Teacher may be sitting close guiding a child or coaching the activity as the children go along.

Indicators that the time may be teacher-initiated:

1. Do all/most of the tables contain the same or similar activities?
2. Is there an example of the finished project/activity for the children to see?
3. Is the teacher guiding the children through the activity?
4. Are the children required to remain seated at the activity they are working on/are most of the children sitting at the activity?
5. Is the teacher guiding children towards or away from certain activities?
6. Do all the children seem to know what to do without interacting with/asking their peers? Are all the children performing a similar task?

Child-Initiated: An adult may have set up an activity, but the children suggested or chose to do it without the adult suggesting or directing the children. The tables are available for the children to choose activities and the children are guiding the activities.
Indicators that the time may be child-initiated:

1. Do the tables have different activities on them?
2. Are the children moving freely from table to table, etc?
3. Is the teacher asking the children open-ended questions about what they are working on?
4. Are the children interacting with each other—asking their peers about what they are doing or requesting peer involvement in their activity?

Results

Table 2 describes the percentage of NAEYC-defined developmentally appropriate practice indicators observed in 5 ECDC classrooms.

Table 2.
Percentage of NAEYC-defined Developmentally Appropriate Practice Indicators Observed in 5 ECDC Classrooms

NAEYC Indicator	Range Observed 5 ECDC Classrooms	Average Observed 5 ECDC Classrooms
Child Directed: Children are allowed to choose freely from simultaneously presented learning activities.	0% - 40%	16%
Children worked alone or in small groups	36% - 67%	58%
Child worked with teacher	33% - 64%	42%
Encourage Language Development (B-7d)	55% - 100%	74%
Teacher spoke no Spanish	0% - 100%	38%
Teacher spoke mostly Spanish	0% - 50%	43%
Encourage thinking, reasoning and experimenting (Mathematics and Science Activities: B-7c)**	48% - 92%	74%
Encourage creative expression and appreciation of the arts (B-7g)	35% - 95%	69%

**Indicator derived from Bredekamp, 1987

The results shown in Table 2 indicate that most observers rated the classrooms as teacher-directed. Only an average of 16% of the activities rated was considered child-directed. This was reflected primarily by the fact that teachers determined the time when activities began or ended and directed students to particular stations accordingly. The range across classrooms from 0% to 40% suggests that the teacher directed-ness was the modal strategy in all of the classrooms observed.

A consistent average of approximately 70% of activities across all classrooms was observed with respect to teaching strategies that promote language, mathematics, and creative arts thinking skills. While somewhat variable from classroom to classroom, teaching

activities largely reflected consistency with developmentally appropriate philosophy.

Similar variability was observed with the general responsiveness of teachers to indicators focusing on the fostering of positive socioemotional classroom experiences shown in Table 3.

Table 3.
Percentage of NAEYC-defined Developmentally Appropriate Practice Indicators for Positive Socioemotional Classroom Environments

NAEYC Indicator	Range Observed 5 ECDC Classrooms	Average Observed 5 ECDC Classrooms
General interpersonal responsiveness to children: e.g. listening and asking open-ended questions (A1, A2, A3)	0% - 100%	59%
Fosters independence in routine activities: Picking up toys and wiping spills (A5)	0% - 100%	95%
Positive guidance and redirection (A6)	39% - 67%	50%
Staff facilitates cooperative, relaxed learning environment: Pleasant sounds such as laughter (A7) Staff assists children to be comfortable (A8) Staff fosters cooperative play and prosocial behavior (A9)	0% - 100%	75%

Much of the variability reported might be expected from the differences in age among the different classrooms. Observers randomly chose classrooms, which may have entailed their observance of three-year-old classroom one day and an eight-year-old classroom another. Establishing a consistent criterion to determine fostering independence might be especially difficult under this situation. Note, however, that the consistent average of about 50% reflected a general positive climate conducive to socioemotional growth that was consistent throughout all of the classrooms.

Finally, general accommodation of DAP principle is observed by the percentage of NAEYC centers available to students in the five ECDC classrooms shown in Table 4.

Table 4
Percentage of NAEYC-defined Developmentally Appropriate Learning Centers Present in 5 ECDC Classrooms and Teacher Self-Evaluation of Quality

Percentage of NAEYC-defined Appropriate Centers	Range Observed 5 ECDC Classrooms	Average Observed 5 ECDC Classrooms
Permanently available	47% - 80%	59%
Available on a rotating basis	67% - 93%	79%
Teacher-rated quality 1 (poor) – 5 (excellent)	3.7 – 4.1	3.3

Heterogeneously detailed learning centers are a hallmark of the DAP philosophy. Teachers can provide learning opportunities to students of differing abilities by allowing children to work at their own pace on tasks that match their cognitive levels.

General Summary and Conclusions

In summary, our empirical description of the developmentally appropriate practices observed in our sample of five classrooms stands as a powerful reminder of what is appropriate about developmentally appropriate practices. The results reveal that even within a setting specifically designed to facilitate developmentally appropriate education, there was substantial variation surrounding major themes and teaching strategies.

"What is appropriate" about any educational program is that positive learning opportunities that encourage cognitive and socioemotional growth are accessible. The results of this study provide relevant insights. First, a lack of understanding about the specific tools for promoting developmentally appropriate learning environments remains the major challenge for teacher preparation programs. In this respect, results of this study provide formative

feedback to the ECDC teachers as well as to the pre-service teachers currently involved in educational preparation at the university-based laboratory school. Exposure to this feedback is expected to foster self-reflective improvement (Lay-Dopyera & Dopyera, as cited in Bredekamp, 1987). Teachers might begin to pay more attention to their practices. Inter-classroom dialogue about specific teaching practices would further facilitate the growth of this reflection. The ultimate result would be conclusions about how and why some practices work and others do not. Reflecting while teaching helps early childhood professionals to internalize what they do and to explain what they do and why they do it.

Second, the results and very conduct of this study serve as an example to both professional and pre-service professionals of the value of action research in a classroom setting. In this respect, this project illustrates a most appropriate use of university laboratory school facilities to promote best practices for teachers, interns, university students, and faculty. University faculty directed their students to assist in data collection, a hands-on learning experience. Classroom teaching faculty were observed and received formative feedback regarding the proficiency with which they use developmentally appropriate teaching methods. School children received the benefit of an innovative and consistently evaluated teaching and learning environment.

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