The Developmental-Interaction Approach:
Defining and Describing New Mexico's Curriculum for Early Childhood Care & Education Programs

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In celebration of
the *25th Anniversary*
of the creation of the
**New Mexico Office of
Child Development.**

Table of Contents

Note: This has been written in an effort to define and describe in detail the curricular approach that is expected to be implemented in New Mexico's early childhood care and education programs. This is especially true of the curriculum when implementing New Mexico's Authentic Observation Documentation Curriculum Planning Process. Any questions or comments should be directed to **Dan Haggard, Deputy Director of Programs, Early Childhood Services Division, CYFD (dan.haggard@state.nm.us).**

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Throughout the first section of this document, you will find quotes in the margins. These are short excerpts, some paraphrased, from the paper written by **Edna Shapiro** and **Barbara Biber** and published in 1972, *"The Education of Young Children: A Developmental-Interaction Approach."* Each quote includes the page number where you can read the information in context in the second section of this document.

*The fours' classroom hums with activity. The children have just finished a meeting on the rug where they and teacher Frances cowrote a thank-you note to a rancher, thanking him for a recent trip to his ranch to observe him shearing a sheep. Three children are in the cooking area with a parent volunteer dyeing wool. Two children are working on the looms their teachers have created from wooden crates and nails. Two other children remain on the rug with Frances to dictate a story map of their experiences at the ranch. One child is curled up with **The Goat in the Rug** while someone else is looking at **Charlie Needs a Cloak.** In addition to these two children's books, the shelf is filled with other books related to the children's study of wool, sheep and goats, herding, and weaving. There is raw wool in baskets to touch and sniff. Four children are using clay; one calls out that she's made a sheep. The easel, the water table, the block, and dramatic play areas are open. Some play there is related to the study, but some is not. The second teacher, Alberto, sits at a table with three children asking a question that provokes new ideas for further investigation. He asks: "How might we find out if other animals must be sheared each year?"*

In the living room of a family child care home not too far away, an infant is sound asleep. The provider carries a toddler who just woke up and brings him to the changing table. She talks to him about his nap and tells him she will give him a fresh diaper. They smile at each other, apparently knowing each other well. Two children sit nearby at a low table, where they are playing with dough. They giggle together as they knead the dough, poke it, and slap it. The provider looks over at them and tells the child she's diapering, "Those two are having a great time with the dough. Is that what you'd like to do when we're finished?" A fifth child snuggles against a pillow examining a laminated photograph of her family. The provider walks over to the children at the dough table and invites the child with the photo to bring all the photos there, too. The child joins them and all four children explore the properties of the dough with rolling pins and their fingers as they roll, pound, and poke it. Their teacher describes their activities: "Jacobo is using the wooden roller and Liz is squishing her dough by pushing it really hard."

How do these educators know what to do? This document outlines ***New Mexico's Developmental-Interaction Approach*** to early childhood curriculum as illustrated in the scenarios above. In so doing, it supports policymakers and guides early childhood educators as they make decisions that determine curriculum.

> ***Curriculum*** is the content of teaching that educators design intentionally to encourage learning processes; the development of children's physical, social, emotional, linguistic, spiritual, and cognitive skills; and the acquisition of specific information and dispositions toward learning (Wiggins and McTighe, 1998).

Introduction

Learning is children's growing understanding of the world. Since language, literacy, and math skills are embedded in the real and interesting world in which we reside, children gain these skills as they explore their environment and work with thoughtful educators. Children make meaning as they learn about themselves, their families, and their community.

Scientific research (Gebhard, 2009) demonstrates that early childhood is a vital period in children's learning, care, and development. Decades of brain research confirms that the early years establish the foundation on which later development is built because the structures supporting social, emotional, and mental development are developed and the capacity to build these foundations decreases over time. In short:

1. Neural circuits, which create the foundation for learning, health, and behavior, are most pliable during the early years;

2. Safe and supportive environments with responsive adults and good nutrition are the key to brain development; and

3. Social/emotional development and physical health are the foundation for future cognitive and language development.

Developmental neuroscience has provided insights into early brain development and function that now inform good early childhood practices. At the same time we understand more about the economic and human costs of early childhood poverty. More than one-fourth of New Mexico's children spend all or part of their early childhood growing up in poverty (NM Kids Count, 2014). There are large achievement gaps and psychological distress resulting from poverty (Halle, et al, 2009). Early childhood programs can be part of a system of supports for families. The research findings on children's achievement suggest that all children, including those living in the poorest communities, make academic gains in literacy and math achievement when they have teachers who encourage communication and reasoning, are sensitive to their interactions with children, and construct an atmosphere of respect, encouragement, and enthusiasm for learning (Howes, et al, 2006).

New Mexico's Early Childhood Educators

The educators who serve New Mexico's early care and education system are the key to quality programs. Working with young children and families involves emotional work; it is "infused with pleasure, passion, creativity, challenge, and joy" (Hargreaves, 1997, p. 12). Thus, educators must commit to learning about themselves and their personal and professional identities in addition to learning about children, families, and curricular content and implementation.

Reflective practice elicits questions of philosophy, ethics, and practice. As professionals, early childhood educators examine what happens in and outside of their individual settings and reflect upon what works and what they might change (Cahill, 2009). Zeichner and Liston (1996) state that reflection requires wholeheartedness, open-mindedness, directness, and responsibility. We add a fifth disposition to this list: an educator's knowledge of self. This set of attitudes lays the groundwork for reflection, a necessary attribute for the New Mexican early childhood educator.

Wholeheartedness is a way of working with children and families that implies enthusiasm, energy, and willingness to improve even at the risk of failure. Adults continue to learn when they reexamine their experiences and understand the power teachers have when they commit passionately and fully to their work – work that is founded on relationships with children, families, and the wider world. Educators collaborate in decision-making with colleagues and families. Learning and growth occur in relationships with others: faculty, peers, children, mentors, and community members.

Open-mindedness is the ability to hear and understand contrasting perspectives, even when they challenge long-held opinions. In their daily practice, educators demonstrate open-mindedness when they readily allow other educators and families to observe their work and discuss it honestly. Open-mindedness is a willingness to share and accept feedback, recognizing that change may be threatening and difficult as well as satisfying and energizing. It involves negotiating perspectives, hoping that the ideas and practices of others will strengthen one's own. Delpit (1993) reminds us that we may not realize that what appears normal or natural to us is often the result of our cultures. Therefore educators engage in listening and open dialogue to understand when their biases are the cause of a misunderstanding.

Working with young children and families involves emotional work; it is "infused with pleasure, passion, creativity, challenge, and joy"

New Mexico's Early Childhood Educators

Directness is defined as confident knowing (Dewey, 1938). Confident knowing leads an educator to trust her professional and personal intentions and to feel secure enough to pursue knowledge she does not already have. For the classroom teacher, confident knowing requires a deep understanding of the curriculum – language arts, science and math, and the social sciences; for the infant-toddler specialist, confident knowing demands knowledge of children and the ability to continue learning about them. In both cases, knowledge is coupled with perceptive understandings of each child's development and unique characteristics. The professional strives for expert mastery of theory (e.g., mathematical thinking in young children) and the confidence to put theoretical understanding into practice (e.g., confidently engaging children actively with manipulative and sensory materials that lead to children's lasting comprehension). ***Adults employ the "texts of early childhood" (Cuffaro, 1991) such as paint, collage, blocks, clay, music, and movement to make subject matter come alive.*** In this way, early care and education professionals are scientists and artists who pursue their work with intellectual curiosity and creativity. They learn about subjects and materials to become confident knowers.

The educator who serves home-based or community settings has somewhat different expertise as a confident knower from those working in the classroom. For example, the subject knowledge for an early interventionist includes child development knowledge coupled with medical and environmental risk factors, specialized family education, and multidisciplinary teaming. As with the classroom teacher, these educators periodically review the effectiveness of their work in order to improve the quality of their work. They decide what more they must learn or practice in order to be self-assured. This professional also seeks feedback from others. Confident knowing is evident when adults are seen engaged in learning: individually, with their colleagues and family members, and, of course, with children.

Responsibility is the obligation to do the right thing. At its essence, working with children and families has a moral purpose (Noddings, 1987), and educators are advocates who can make a difference in the lives of the children and families with whom they work. It is incumbent upon them to learn about shared power and accept personal responsibility for their actions. Responsibility implies that educators have an obligation to work toward fairness in their daily work. This includes the professional obligation to continue to develop knowledge of the field of early childhood care and education.

Knowledge of Self means understanding one's inner feelings to clarify emotional reactions that form and sometimes distort (Palmer, 2010) the educator's work. Working with young children and families can be stressful and exhausting. Emotions can be scary and sometimes adults avoid children's strong feelings. Anger and conflict – or the prospect of either – can be particularly difficult to handle for the unaware educator. When educators understand their own feelings and what to do about how they feel, they can better understand children and form deep relationships with children, families, and co-workers (Casper & Theilheimer, 2010).

Creating a System to Support Curriculum Development

Knowing that the early years are vitally important, educators, community members, and policymakers develop *benchmarks of quality:*

- *Educators with specialized training in child development and early education,*

- *Small class size and low staff-child ratio,*

- *Programs that address all domains of development within a responsive environment for family and child well-being, and*

- *Evaluation systems that support quality and inform professional development (Barnett & Frede, 2010).*

The young learner and the learning environment are closely connected. An infant learns to talk when adults talk with children and the children talk to each other. A preschooler learns to explore in a place where exploration is valued and made possible by adults.

Curriculum for young children involves the learner and shapes the learning environment. Yet the field of early childhood education does not promote any single curriculum model as "best." The National Research Council and the Institute of Medicine report that no single early childhood curriculum model has been found to be superior in supporting children's learning and preparation for formal schooling (2009). Their recommendations call for educators to plan curriculum that actively integrates the cognitive, social-emotional, and physical domains.

In this document we present the **Developmental-Interaction Approach** to curriculum, which enables adults to plan for and enact rich curricular content in the developmental and cultural context of their group of children. Teachers and others who work directly with children and can get to know them well have the power and responsibility to create extensive learning experiences for them. This curriculum framework is based on philosophical commitments as well as on the best available empirical evidence about young children's learning and development.

*We use the term **curriculum framework** to describe guidelines for early childhood educators to construct theory-driven curriculum. This curriculum emerges from their program and community and follows the principles of the **Developmental-Interaction Approach.*** It is not inflexible, academic, or formal, and does not ask children or teachers to use a prescribed or imposed model. Instead, this approach offers a pedagogical structure – a theoretical stance, rather than a curriculum model. How each individual educator and community applies this framework will vary. With grounding in a shared vision and personal connections to a philosophy of teaching, adults deepen their commitment to thoughtful and intentional practices. Thus, the educator is the perpetual developer of curriculum in each early childhood setting.
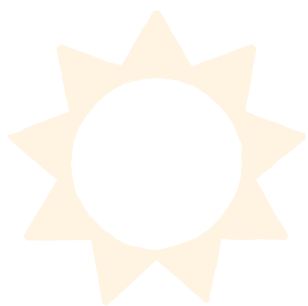
The Importance of Development and Interaction

What is Development? Development is an individual's growth in the social, emotional, cognitive, linguistic, spiritual, or physical domains. It is a dynamic process that occurs through relationships, environments, and experience. It is neither predetermined nor linear, yet individual growth and the contexts of development are connected. Children are active participants in their own development through personal interests and needs (Tout, et al, 2013).

What is Interaction? As active learners, young children need opportunities to observe objects, people and events in their world; form hypotheses; try them out; observe what happens; and formulate answers (Dewey, 1944; Glassman, 2001). Children work alongside others in discovery and dialogue, asking meaningful questions and solving problems. Learning is with peers and adults (Edwards, Gandini, & Forman, 1998), not something that is done to the child, but rather something a child does (Firlik, 1994).

Promoting Cognitive Growth from a Developmental-Interaction Point of View (1971) describes the aims of education as:

- To support the integration of affective and cognitive domains
- To strengthen the commitment to and pleasure in work and learning
- To broaden and deepen sensitivity to experience
- To promote cognitive power and intellectual mastery
- To nurture self-esteem and self-understanding
- To encourage differentiated interaction with people
- To promote the capacity to participate in a social order

Several theorists lay the groundwork for the *Developmental-Interaction Approach's* pedagogical structure. John Dewey's emphasis on education for democracy (1916), his understanding that children learn through experience with the world and with each other (1938), his support for the arts in education (1934), and his discussions of reflection (1910) underpin the *Developmental-Interaction Approach.* Lucy Sprague Mitchell, Caroline Pratt, Harriet Johnson, and other groundbreaking educators involved with the Bureau of Educational Experiments, Bank Street College's predecessor, demonstrated how Dewey's ideas translate into direct work with young children.

The *Developmental-Interaction Approach* also reflects Susan Isaacs' recognition of children's feelings (1930). She believed that intellectual growth and emotional development go hand in hand and emphasized the importance of play (1929). Much more recently, Dynamic Systems Theory (Thelen, 1996) illustrates how the developmental domains intertwine and how children's temperament, experience, culture, and biology interact to influence each child's unique development. The interconnectedness of developmental domains is also reflected in the work of Vygotsky, who viewed children's thought and language as entwined (1978). Thus, the role of an educator is that of a facilitator providing scaffolding to assist children in their learning and consequent development (Diaz, Neal, & Amaya-Williams, 1990).

The theory and research that supports the *Developmental-Interaction Approach* reflects a keen awareness that children investigate the worlds in which they live and recognizes the educator's responsibility to interact frequently and respectfully with those people who are closest to the child. Bronfenbrenner's Ecological Systems theory (1979) describes the concentric circles that surround every child – first, the innermost circle, or micro-system, that includes the family, school, and other groups with whom the child associates on a regular basis; and, eventually, the outer circle, or macro-system, of the culture at large. The *Developmental-Interaction Approach's* commitment to democracy shows respect for the child as a responsible member of both the smaller and the larger world.

9 PRINCIPLES OF PRACTICE

*The **Developmental-Interaction Approach** provides dual emphasis on who children are (development) and how their development and learning occur (through their interaction with the world of people, ideas, and material objects).* Thus, the educators' role centers on their:

- Understanding of children;

- Inquisitive stance as they continue to learn about the children with whom they work;

- Commitment to the intricacies of the many relationships involved in that work; and

- Passion for increasing their general knowledge.

This section is organized by four **Big Ideas** and how practices of educators relate to these concepts: Development, Interaction with the Social World, Interaction with the Physical World, and The Early Childhood Educator as Learner and Researcher. The 9 Principles of Practice are divided into these sections.

Big Ideas	*Principles*
DEVELOPMENT:	**1 ▶ All educational work is grounded in an integrated understanding of human development and an acceptance that people learn in different ways and at different rates.** **2 ▶ Children's families are an essential part of their education and care experience.** **3 ▶ Diversity is a resource for adults and children.**
INTERACTION WITH THE SOCIAL WORLD:	**4 ▶ Learning is social and children learn in interaction with each other, their educators, and their environment.** **5 ▶ Both adults and children ask and pursue answers to challenging and worthwhile questions.**
INTERACTION WITH THE PHYSICAL WORLD:	**6 ▶ Children engage intellectually and emotionally with materials, ideas, and people — as individuals and as a community.** **7 ▶ Adults guide and facilitate learning and respect children as playful learners, experimenters, innovators, explorers, artists, and communicators.** **8 ▶ Children and adults advocate for fairness and justice.**
THE EARLY CHILDHOOD EDUCATOR AS LEARNER AND RESEARCHER:	**9 ▶ Educators are lifelong learners and inspire children to become lifelong learners.**

DEVELOPMENT

The developmental emphasis of the *Developmental-Interaction Approach* concerns three of the 9 Principles of Practice. The first is that work with children is grounded in a deep and well-considered understanding of human development that acknowledges human differences. The second highlights how relationships with families that are based on respect lead to educators' deepening understanding of each child's unique circumstances. The third underlines the importance of diversity without minimizing the ways in which our diversities challenge us to communicate to understand one another.

Principle 1 ▶

All educational work is grounded in an integrated understanding of human development and an acceptance that people learn in different ways and at different rates.

Development and a drive to learn begin in the prenatal period and extend throughout life. The early years are an unparalleled time of rapid growth, particularly in sensory and brain development. Theorists such as Jean Piaget and Erik Erikson often describe development as occurring in stages, and they typically focus on a single developmental domain – social, emotional, cognitive, linguistic, spiritual, or physical. In contrast, the *Developmental-Interaction Approach* considers all the domains equally important and inextricable from one another. *This approach also acknowledges that development does not occur along a progressive path but rather lurches backward and forward, the result of many interacting influences.* While many theories generalize about all children, young children differ in temperament, learning style, home environment, cultural background, strengths, abilities, and experiences that may be growth-inducing or -adverse. These differences influence development and learning.

Principle 2 ▶

Children's families are an essential part of their education and care experience.

Families are their children's primary caregivers; educators are valued partners in early education and caregiving. The best care and education settings outside of the home are rooted in the familiar cultural context of the family. Families transmit values, beliefs, and a sense of belonging to their children in the language of their home (Sanchez & Thorp, 1998). In addition to putting children and families at ease, adults who communicate with children and families in their home language have the advantage of understanding nuances. There is also a greater likelihood that children and families will understand the educator.

Families and the adults who work with their children must become partners; such partnerships that support the family's goals for the child are critical to children's academic success and later school achievement (NRC, 2001a). Misunderstandings with children and families can occur but are more easily resolved when educators examine their own cultural assumptions. Although early care and education professionals who reflect on their own perspectives and are open to learning about the families' and children's points of view may not always agree with families' approaches, they are better positioned to communicate effectively and openly, to learn from children and families, and to develop close relationships. Families need information from their children's educators to support their children's learning and development; in turn, they can provide educators with invaluable insights.

Principle 3 ▶   **Diversity is a resource for adults and children.**

Early care and education professionals recognize and understand that "there is no such thing as developmental competence outside of a cultural context" (Bowman, 2006, as cited in Casper & Theilheimer 2010, p. 222). Culture, particularly the individual culture of their family, influences children deeply. It is "an intricate dynamic process that shapes and is shaped by how people live and experience their everyday realities" (Williams and Norton, 2008, p. 104) and establishes the social context within which children learn, grow, and develop. It is a complex whole of language, knowledge, beliefs, art, morals, laws, customs, and ways of living that one generation passes to the next (Cole, 1999). Social groups, the family, neighborhood, religious or ethnic groups within a society, explicitly or implicitly, pass their customs, values, and moral principles to the young. Beginning at birth, the culture socializes children to become members of a society. But children are not just products of the surrounding culture. As they grow, children pick and choose selectively from the cultural influences they encounter, shaping their own cultural context over time (NRC & IM, 2001).

The Role of the Educator: Implementing Principles 1-3

> The developmental processes of affective and social development are interdependent and interactive with cognitive development.
>
> Growth of cognitive functions cannot be separated from the growth of personal and interpersonal processes. The interdependence of the developmental processes is a distinguishing feature of the **developmental-interaction approach.**
>
> *See pages 45 and 46*

Development does not happen to children but rather children's development results from their experiences in the world, which is influenced by what they bring to those experiences, and by the way the adults in their lives help them to make sense of their experiences. Because children's experiences vary, educators must understand how different experiences may impact development. For example, the child who has lived in multiple foster care settings may be less likely to trust adults than a child who has lived within one family context. *When professionals respect and understand each child's culture, experiences, and abilities, they support children's evolving capacities to learn both cognitively and emotionally. The Developmental-Interaction Approach regards intellectual and affective development as interconnected.*

Educators promote cultural awareness and acknowledge different ways of knowing (Moll, Amanit, Neff and Gonzalez, 1992) in the ways they set up space and materials, and when they interact with children and families such that children develop a sense of identity and a connection to a community. They recognize bilingual and multilingual language development as a strength and support the maintenance of a child's first language. Ideally adults in educational settings speak the language of the community of children served. Assessment should be done in the language of the home.

As educators work with young children who have exceptionalities, they offer them the routine support all children deserve and tailor that support to the child's particular circumstances. Whenever possible, teachers, early intervention specialists, and other resource personnel serve children with special needs in inclusive environments, creating learning environments in which all children belong (Kaczmerek, 2006). Understanding diversity of development allows adults to plan deliberate curriculum strategies and coordinate planning and communication with all the adults toward support of the child.

DEVELOPMENT

The Role of the Educator: Implementing Principles 1-3 *cont'd*

Specialists in occupational therapy, physical therapy, speech and language therapy, and special education collaborate with generalists and children's families, constantly exchanging observations and suggestions. As often as they can, specialists engage with a child who has exceptionalities in the room with other children. The children learn from each other and the specialist observes the child in the real life context. An inclusive classroom emphasizes children's strengths and accommodates their needs with appropriate physical environments and materials. Inclusion of children with exceptionalities or delays has benefits for everyone. All of the children gain increased understanding and respect for others through their social interactions and peer engagement with other children who are both similar to and different from them.

Educators discuss curriculum with families so they gain an understanding of what their children do in their absence and of what they are learning. In addition, family members have much to offer the curriculum – cultural artifacts to examine, family stories to hear, and worksites to visit. For example, when three-year-old Roberto was recovering from surgery, Carly, his teacher, arranged to visit his home with three classmates. They had fun playing with Roberto and with his toys and had some questions about objects in his home. In particular the children were quite interested in large decorated candlesticks that had been in Roberto's family a long time and represented their family's religious heritage. Once Roberto returned to Carly's class, his mom paid a visit and brought her candlesticks to show the group. The children were enrapt as she told them stories about many generations of her family using these candlesticks.

> Through observation and interaction, educators know individual children, their strengths, and their family and cultural backgrounds. Such specific knowledge enables teachers to incorporate children's social and emotional selves, linguistic backgrounds, and physical and cognitive abilities, with developmental information such as the *New Mexico Early Learning Guidelines.*

Educators discuss curriculum with families so they gain an understanding of what their children do in their absence and of what they are learning.

The Developmental-Interaction Approach: 9 Principles of Practice

INTERACTION WITH THE SOCIAL WORLD

The interactional emphasis of the *Developmental-Interaction Approach* deals with two of the 9 Principles of Practice. The first is interaction with the social world, with peers, and with adults. Learning is a social endeavor. To learn subject matter and about themselves and others, children interact with each other, with educators, and with their families and communities. The second describes the way children and adults pursue knowledge and understanding through their social interactions.

Principle 4 ▶ **Learning is social and children learn in interaction with each other, their educators, and their environment.**

Children learn with and because of the people around them. Learning occurs best in collaborative groups as children watch, listen to, and respond to each other. Research has shown that children construct their own knowledge through physical, social, and mental activity (Bredekamp & Copple, 1997; Piaget & Inhelder, 1969). They are also active learners. Their learning is mediated and linked to the sociocultural context (Vygotsky, 1986).

Curriculum begins with the children as they learn through relationships and experiences that integrate physical, social, and cognitive development. The curriculum is comprehensive, integrating all domains of development and academic content areas. *Children learn subject area content such as mathematics, science, and reading in age-appropriate and meaningful ways when they use the skills of each subject area to investigate topics of interest to them.*

Because children's interaction with the social world drives their development, the educator is aware that children come to programs with diverse emotional and cognitive resources and varying levels of resilience (the ability to recover from or overcome difficult circumstances such as poverty or exposure to violence). Children from families living with poverty, for example, often enter formal schooling with lower levels of foundational skills such as those in language, reading, and mathematics. Educators use their expertise to make individual adaptations as needed to optimize learning for the diversity of children with whom they work, knowing that children gain language skills, for example, when they converse with other verbal children. Play with one another, which most children want to do more than anything else, builds their language and thinking skills.
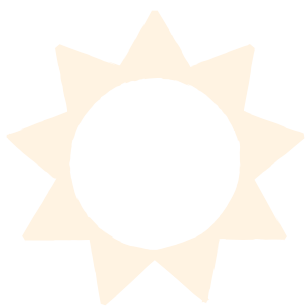
Principle 5 ▶

Both adults and children ask and pursue answers to challenging and worthwhile questions.

As active learners, young children and the adults with whom they work need opportunities to observe objects, people, and events in their world; form hypotheses; try out the hypotheses; observe what happens; and formulate answers (Dewey, 1944; Glassman, 2001). Both adults and children raise questions, based on what they find interesting in the environment. Then they set about finding answers. For example, a one-year-old who wants a ball that rolled onto a blanket raises the question "How can I get that ball?" without putting it into words. With an observant adult who supports her investigations without giving her the answers, the child discovers that she can pull the blanket toward her to reach the toy even though it is farther away than the length of her arm. A block bobbing on the water table motivates a four-year-old to test as many objects as he can find to discover what will sink and what will float. The observant adult notices the questions that children pursue even when children do not verbalize them. Her notes about the children's questions enable her to ask provocative questions on the spot: "Will this penny sink or float?" "Will a peach float?" And, she is able to plan future curriculum that fits the children's interests.

Children observe their environment and the people around them to learn more about social interactions and cultural practices. They develop verbal and nonverbal communication skills, sometimes in multiple languages. They gain control over strong emotions and regulate their behavior as they move through the preschool and kindergarten years.

INTERACTION WITH THE SOCIAL WORLD

The Role of the Educator: Implementing Principles 4-5

The educator creates the psychological environment of the classroom or home and supports, sometimes orchestrates, the social interactions there. E*very child deserves consistent, predictable, reliable, and responsive adults who are available to them both emotionally and cognitively. Nurturing and responsive relationships provide the foundation for healthy growth and development.* These relationships help children develop a sense of security and trust. Infants and toddlers learn through reciprocal communication and interactions with adults in the context of routine care, play, and within an appropriate developmental environment. Preschoolers and kindergartners learn from investigative experiences in small groups and through whole group conversations that build a sense of community. Adults create those small group and large group experiences, raising provocative questions, pacing discussions carefully, enabling everyone to participate, and prompting children to clarify their thinking.

Learning occurs in a social environment with adults and more capable peers providing verbal and nonverbal assistance, or scaffolding, to help children stretch to perform at a higher level than they could reach independently (Vygotsky, 1978). Educators determine how and when to scaffold a child's learning and gradually reduce support as the child begins to master the skill. The adults then set the stage for the next learning. Picture an adult and a three-year-old at a table with a nine-piece jigsaw puzzle that the child has not yet mastered. Although the adult is itching to place a piece in the puzzle himself, he instead shifts it slightly on the table to enable the child to see where it might fit. The child places it in the puzzle, takes another piece and proceeds until she finishes. The adult coaches her occasionally but only when she seems stumped, and he never does the puzzle for her. Upon finishing it, the child beams with delight and immediately dumps the puzzle and starts all over. This time, she needs no help from the adult who remains at the table with her to celebrate her achievement as she completes the puzzle again and again.

Progress from earlier to later levels of functioning in any domain (emotional, intellectual, or social) is characterized by moments of equilibrium in which the individual's schemata are adequate for the task at hand, and by moments of instability in which currently operative structures are breaking down but new ones are not sufficiently developed to take over completely.

A balance of developmental pressure is needed as well as artful scaffolding.

INTERACTION WITH THE PHYSICAL WORLD

The second interactional emphasis of the *Developmental-Interaction Approach* is contact with the world of objects and ideas that emerge from that interaction. This emphasis embraces three additional principles of the approach. The first puts forth that children engage actively with materials, ideas, and people on several levels – both intellectually and emotionally, and alone and with others. The second further emphasizes children's active role as playful learners, experimenters, innovators, explorers, artists, and communicators. The third extends interaction beyond the walls of the classroom or home to the world as a whole. It acknowledges the *Developmental-Interaction Approach's* commitment to fairness and justice and lays the foundation for children's pursuit of what they believe to be right for themselves and others.

Principle 6 ▶

Children engage intellectually and emotionally with materials, ideas, and people – as individuals and as a community.

Children learn through active investigation and first-hand action on the places and things around them.

> **Given the opportunity, children explore with great curiosity and delight and acquire knowledge from people, from written and graphic material, and especially from their own investigations. To explore the world, children go on field trips and social studies becomes the core of the curriculum.**

Through social studies, children and their teachers explore the web of relationships that underlies daily life. These connections often are not apparent to children and can be invisible to adults as well. A child who says "You may get your milk from a cow, but I get mine from the store" hasn't thought about where the store gets it. When children trace the sources of the food they eat, they can begin to comprehend the interdependency that sustains them and their communities, and they can investigate and question the logic and order of the world around them. Such a study, which involves reading, writing, calculations, science experiments, and artistic representations, provides a way for the children to integrate, or fit together, what they are learning. Through discussions with one another, the children also simultaneously build their social environment and learn about their classroom community (Casper & Theilheimer 2010, p. 390).

Children learn through exploration of their own communities in places like the pañería or bakery, grocery stores, the fields, and more. Children learn through direct experience with their subject of study, and then enrich that experience with related activities in the classroom. At class meetings and educator-facilitated group activities, they develop and exchange ideas. During independent work and play, they make their own choices, often in collaboration with friends. The teachers and children engage in an investigation for a long time. Infants and toddlers go on walks with their caregivers, taking in the world as they point to an airplane overhead or a lizard on a rock. Their adults respond appreciatively with the words for what the children perceive around them, thus helping even very young children to make sense of their environment.

Principle 7 ▶   **Adults guide and facilitate learning and respect children as playful learners, experimenters, innovators, explorers, artists, and communicators.**

Play represents the child's symbolic reconstruction of reality.

Play requires that the child feel a basic safety and security in the world, a willingness to be open with other children and adults.

A sense of safety and trust is an essential prerequisite of playfulness, symbolic exploration and subsequent learning and integration of experience.

See page 56

Why Play?

- For the joy and wonder

- For opportunity it offers to express and work through emotional uncertainty and difficulties

- For its role in cognitive development

- For stimulating connections between emotional and intellectual learning

- For the syntheses of feeling and thinking that is essential for maximum engagement in learning

See pages 55 and 56

A growing body of research supports "playful learning" (Hirsh-Pasek & Michnick Golinkoff, 2014), where teachers offer a rich core curriculum using a pedagogy of play. Studies support links between play and learning in the areas of language and literacy (Weisberg, Zosh, Hirsh-Pasek & Golinkoff, 2013), mathematical thinking (Fisher, Hirsh-Pasek, Golinkoff, Singer & Berk, 2011), cause and effect (Gopnik & Walker, 2013), and creativity (Russ & Wallace (2013). Marcon's longitudinal research (2002), for example, compares sixth-graders who experienced child-initiated learning to those who experienced didactic, direct instruction, or mixed approaches (didactic instruction and play-based learning). The study found that the children in the child-initiated, play-based classrooms showed superior social behaviors, fewer conduct disorders, enhanced academic performance, and retention over those from didactic settings.

Play and investigation serve as the primary modes for learning. Play is how children find out about the world around them. All types of play – manipulative play, play with games, rough-and-tumble play, and sociodramatic play – provide children with opportunities to experiment, observe what happens, and learn (Rubin, Bukowski, & Parker, 1998). Through play children discover, create, improvise, and imagine. As babies and toddlers, they use their senses, physical movements, and the people around them to learn. Preschoolers construct knowledge through their play and build emotional and social skills as they develop intellectually. When children play with other children they create social groups, test out ideas, challenge each other's thinking, and build new understandings. *As young children make friends or engage with provocative materials, the adult supports their interests. The educator interacts with them, asking questions, observing, and offering challenges so that children learn new skills and concepts and apply and adapt ones that are already established.*

Principle 8 ▶   **Children and adults advocate for fairness and justice.**

When adults understand the context of children's lives, they provide meaningful opportunities for children to make sense of the world and imagine how they can make it a better place. Young children experience issues of unfairness and inequity in their daily lives. Some children experience violence in their own lives and seek to make sense of it. Others are keenly aware of when other children are unfair to them, but they also can be extremely kind to others. For example, as they choose their friends or are not chosen themselves, they understand issues of power and intolerance and the connection between the two. They can understand too about unfairness that goes beyond themselves and their social groups. Children ask questions about people who do not have enough food or do not have a home, and they worry about animals being maltreated.

The Role of the Educator: Implementing Principles 6-8

> **The adult's knowledge and understanding of each child is the basis for curricular strategies, content, materials, and areas of investigation. And the educator's knowledge of the community facilitates active engagement in the child's world.**

From studying children the adult prepares the educational environment as the first step in planning curriculum. In the **Developmental-Interaction Approach,** the educational environment includes both the classroom and the local community. Thus the educator arranges space indoors and plans how to use the community beyond. Opportunities to engage with the natural world are also an integral part of the educator's planning.

The educator writes curriculum plans that build the skills of reading, writing, science, math, and the arts (painting, drawing, music, and movement) through investigations as the learners represent and deepen their experiences (Vascellero, 2011). What follows is an example of an investigation in a classroom for 4- and 5-year-olds:

The adults and children visit a local farm to study chile farming. They focus on the social sciences, such as history and geography, as they learn about people's work, how the natural world can produce energy and food, and how this work is hard and essential for many in their community. The teacher brings in reference books and children's literature about chile and farming. The class studies types of chiles, soil, sun, and temperatures needed for growing, and then plans and plants chile gardens on the playground. In the dramatic play area the children play as distributors of chile, packaging and mailing written requests. They utilize their developing skills of measuring and counting. Opportunities for experiments, interviewing family members, stories, letter writing, reading folklore, map making, and cooking are all available to the teacher and children as they make sense of the world in which they live. Artistic and scientific experiences are nested in the community's cultural context, resulting in an integrated curriculum that the children pursue in a variety of ways for several months.

Adults plan intentional curriculum that is content-driven and emphasizes activities and experiences that encourage children to use their skills and capabilities as well as challenge them to learn new concepts and try something that is just beyond their present level. In addition to planning worthwhile investigations, learning opportunities are embedded in the daily routines. *The classroom's daily schedule reflects knowledge of how children learn, balancing quiet and active experiences; times indoors and outdoors; and individual, small group, and whole group activities. All these activities engage children directly with materials. The children are the doers, using their bodies as well as their observation skills to learn.*

Educators strive to provide for children's engagement with the natural world. Outdoor spaces with both intentionally planned and spontaneous opportunities for rich exploration and meaning-making build awareness and observational skills in children (Faber Taylor, et al, 1998).

Ladybugs in the yard spark children's interest in insects, how they fly, what they eat, and their similarities and differences to other insects. Using books, scientific skills of observing and recording animal behavior, art materials, and mathematics, children can sustain the investigation over a long period of time. Such community investigations include a hands-on approach to nature and provide the opportunity to develop integrated natural science knowledge.

Field trips serve as the gathering of raw materials for investigations. For example, regular visits to the antique store across the road arouses children's curiosity in the differences between the cultural artifacts of the past and those we use daily and take for granted. In this investigation, the culture and environment of the local community provides a rich curriculum, and classroom work links to the real life experiences of children and families, their cultures, their oral and written traditions, and stories and art. Families can participate in regularly organized outings to local parks and other natural areas to explore, play, reconnect, and learn with nature. Such trips can happen frequently and without a vehicle.

Thinking deeply with children about fairness, community-building, and democratic processes is at the core of the *Developmental-Interaction Approach.* A curriculum of fairness connects children and teachers to current social issues.

The educator encourages thoughtful participation in the development of a democratic classroom by acknowledging the intersections of culture, ethnicity, language, class, gender, age, diverse abilities, family structure, sexual orientation, and race. Often children raise questions themselves or teachers extrapolate children's questions from observations of children's play (Cahill & Theilheimer, 1998) that prompt in-depth investigation. Through careful listening to children's talk and with some well-placed questions (Why do you think Anthony is sad?), educators can set the stage for open and respectful dialogue. Many children see and hear the news and when a natural disaster or tragic event occurs, they have some ideas about it from the vivid images on TV. The early care and education professionals in their lives are well-positioned to help children make whatever sense they can of such issues and, when possible, to do something about it. Children can write letters, sell their cooking or baking to raise money to assist others, or find other ways to help. It is through investigations designed to study these social issues that we address dynamics of inclusion and exclusion and caring for others such that the early childhood classroom provides the context for social change.

THE EARLY CHILDHOOD EDUCATOR AS LEARNER AND RESEARCHER

The last principle guides the educator to engage in the intellectual work required to be an effective educator. Adults develop each child's disposition toward lifelong learning through engaged and enthusiastic commitment to learning themselves. The professional who remains well prepared to contribute to the learning and well-being of young children and families renews her own knowledge, skills, and passion. Remaining active learners themselves, educators are like a mirror – shaping their own professional lives as they contribute to the lives of children and families.

Principle 9 ▶   **Educators are lifelong learners and inspire children to become lifelong learners.**

Educators cannot **be developed** but instead **they develop;** it is an active engagement by which each professional drives the direction and goals of her learning. As Paulo Friere states: "I cannot teach clearly unless I recognize my own ignorance, unless I identify what I do not know, what I have not mastered" (1996, p. 2). For some this might mean returning to school to continue their formal education. For others, involvement with organizations such as New Mexico Association for the Education of Young Children or the New Mexico chapter of the Council for Exceptional Children constitutes active engagement in the field of early care and education. Educators' experiences, planning events, and learning with colleagues from across the state enable them to keep current with the latest research and ideas and constantly renew their commitment to quality programming. Since local application is what counts (Buysse and Wesley, 2006), early care and education professionals gain most when they attend meetings with others who work with or near them, process new ideas with one another, and discuss them further as they apply them in their settings.

Other types of active engagement take place within the community, such as serving as a volunteer board member of a nonprofit advocacy agency. Lastly, educators join peers for ongoing learning through teacher research and dialogue about their practice. Educators plan together, sharing children's books, art materials, games and toys, and trip ideas. They grapple together with thorny situations and support each other, sometimes with ideas and sometimes just by listening. The choice and meaning of educators' development is located within their personal and professional lives as well as in the context of their work and community.

Video proves an effective tool for examining one's practice. Watching a replay of one's interactions with children reveals both what educators are glad to see they have done and what they want to do differently. Videotapes offer rich fodder for team meetings or other professional development activities at which adults sit together to talk about their decisions and their instincts – what they have learned about children and what they do based on their gut reactions.

Regular opportunities for reflective supervision create a valuable context for professional growth. In these sessions, early care and education professionals examine their work to understand it together with a supportive and insightful supervisor. Using video or other observations, the two devote uninterrupted time to the early care and education professional's work and whatever concerns her

most about it. In addition to formal education and professional development activities, online resources, early childhood journals, and professional books provide a constant flow of new research and trends. When people who work together also read together and discuss what they read, they can consider how to use new information in their settings with their children and families.

Adults who plan curriculum "intentionally" – deliberately, purposefully, and thoughtfully – root their work in current research and child development knowledge and connect it to the specific children in their care. As they document and monitor children's learning, they collect information about themselves as well. They can use their observational notes to consider how they do what they do and what they might do differently. Together with colleagues, educators reflect on their work in a constant effort to improve it.

> **Working with children is an act of research. It involves daily observation, written reflections on individual children and the group, and purposeful study of issues and questions within everyday practice. The term "teacher as researcher" (Edwards, Gandini, & Forman, 1998) reminds us that educators collect information such as observations, work samples, children's photos and conversations, and written interpretations to continuously document the learning process and construct meaning.**

As educators make curriculum decisions, assessment is a central part of the process. The **New Mexico Early Learning Guidelines (ELGs)** provide reasonable expectations of individual child development and learning outcomes that inform educators as they begin the curriculum planning process. Adults implement their identified goals as they:

- **Build relationships** with children and families.
- **Plan** learning opportunities, playful experiences, and investigations that are age-appropriate, community relevant, and worthwhile.
- **Observe** the children in action.
- **Reflect** on the observations, asking, *"What do the children know and do, and what can they reasonably do next?"*
- **Assess** each child's performance to chart ongoing development and interests.
- **Individualize** to shape curriculum that allows children to take optimal advantage of the curriculum and teaching.

Assessment is part of an ongoing cycle that includes planning, documenting, and evaluating children's learning and enables educators, in partnership with families, children, and other professionals, to plan effectively for children's present and future learning, communicate about children's learning and growth, identify children who may need additional support, and evaluate the effectiveness of learning opportunities, environments, and experiences offered. When educators note that some children need extra support, adults differentiate or individualize their assessment and teaching strategies. Starting from "what the child already knows or can do," the adults provide opportunities such as extended time, physical adaptations, and other curriculum modifications so that all children can remain engaged in learning.

Infants and Toddlers (Birth to 2 years)

In this section we will examine children's investigations, how educators plan for them, and how adults capitalize on the many serendipitous learning moments that occur in their work with children.

Infants and Toddlers (Birth to 2 years)

These youngest children are developing at a rapid pace. Their social interactions, physical achievements, and increasing self-regulation are integral parts of their daily work. Since babies are built to seek novelty, their days are filled with eager explorations of the world around them. With that in mind, the people responsible for their care and education develop responsive, respectful, and reciprocal relationships with them (Gonzalez-Mena & Eyer, 2012). Following the children's cues, they create fascinating environments, both physical and social.

Daily Curriculum

Relationships are at the heart of curriculum for the youngest children. Human beings are wired from birth to form connections with other people, and babies learn about the world through their relationships with the important people in their lives (Casper & Theilheimer, 2010). Throughout these early years, children have new experiences and engage in familiar rituals and routines with the people who care about them. As a result of these experiences, the cells in their brains form synapses – extensions that connect to other cells – and unused cells and connections fall away. The first three years of life constitute a crucial period for healthy brain development.

On a day-to-day basis, the young child's care experience begins with a warm greeting to the family and child as they arrive at the program. While the baby plays or continues a nap that began at home or on the way to the program, the family and caregiver chat about the baby's morning and previous night and otherwise exchange information to keep everyone up to date. The family member says goodbye, whether or not the child seems to acknowledge it, and the day of care and play begins.

> **The room is thoughtfully designed with board books that young children can pull out easily, toys with movable parts that are never small enough for choking, soft toys, and lots of spaces to crawl and climb that have different textures for babies and toddlers to experience. Ideally, the space is partially carpeted for crawling and tummy time on a soft surface and partially tiled for easy cleanup after eating and other potentially messy activities. Rocking chairs and hammocks are comfortable places for adults to soothe babies as they fall asleep or need comfort. Everything for the children is within their reach, while what caregivers need is easily accessible to the adults but not to the children. The space is well-organized and convenient for family members as well as teachers. It is clean and safe. The staff washes the toys and all surfaces regularly.**

In center-based settings, family child care homes, or during home visits, the daily schedule or pacing depends on the children and when each of them is tired and hungry or alert and active. The curriculum revolves around care activities and play; the adults recognize that both are learning experiences for the children.

Scheduling tailored to individual children requires a great deal of communication and coordination on the part of the caregivers, who all must know which children are sleeping, who is about to go to sleep, who can benefit from active play at that moment, and who needs some quiet time. With this kind of flexibility, ability to read the children, and willingness to work as a team, the day flows in a way that suits each child best.

Since routines are an integral part of the day, teachers put as much thought into planning and facilitating them as they invest in preparing curriculum that is more obviously designed for learning. Adults tell babies what they are about to do before picking them up to move them. They talk to them about what they are eating, about falling asleep, and about having a diaper change. Diapering provides an opportunity for interaction between baby and adult. The teacher describes each action and involves the child in every step of the process. Meals are a time of delight and enjoyment as children control what and how much they eat and demonstrate new skills, feeding themselves as much as possible. Falling asleep and waking up are intimate moments that caregivers share with children, speaking softly to them as they help children's bodies have the rest they need and as they welcome children back into active play with others.

The room is designed with space for babies who enjoy lying on their backs reaching for a mobile and for babies having tummy time on a soft surface, safe from other children who have enough room to crawl, and toddlers who walk speedily from one intriguing spot to another. For the child who is just beginning to walk, sturdy low shelves become crucial elements of the curriculum as she grabs the edge, pulls to standing, and holds on, maneuvering on her own. Children who are walking thrive on their upright status and the range of discoveries they can now make as they explore a room rich in physical challenges and exciting experiences with materials.

Interpersonal Connections

At programs that implement primary caregiving (Theilheimer, 2006) in family child care homes and in family/friend/neighbor care, the child and family can rely on one person outside of their family to know them well. The primary caregiver conducts most care routines for the child while she is in care and communicates regularly with the family. When that person is not available, other adults step in, much in the way an extended family surrounds a young child with love and care.

The primary caregiver becomes expert at reading the child's cues. She understands the meaning of the baby's different cries and expressions. The child, in turn, comes to know the caregiver. In fact, the caregiver's ways of interacting with the baby help to establish the baby's expectations of people in general; they affect the baby's sensory internal working model – sensations or feelings that the baby associates with being loved. The baby remains attached to family members. The secondary attachment she forms with her caregiver supports the baby's initial attachment with the family, which enhances the baby's overall experience of being well cared for. A baby held in a caregiver's arms locks eyes with her, and through this sometimes silent, sometimes verbalized communication, intersubjectivity results (Rochat, 2001; Stern, 1985). That is, the baby and caregiver share emotions and are "on the same page." As the baby gets a bit older and turns her focus outward, she and her caregiver focus together on a bird or squirrel, on another child playing across the room, on a toy, or on a parent just entering the room. The caregiver supports joint attention as she watches for the child's interests and follows her gaze to share that interest with her. Joint attention lays the foundation for the many instances in which children and adults want to and must share focus in the future.

Infants and Toddlers (Birth to 2 years)

Interpersonal Connections *cont'd*

To many people's surprise, relationships with peers are important to children from an early age. Babies are fascinated by slightly older children who move quickly and competently, yet are small enough to be closer to their eye level than are adults. Toddlers and even nonwalkers will take objects from one another, since an object that another child manipulates is much more interesting than when it is stationary on a shelf. However, children of this age quickly become interested in something new, and when the child drops the toy, caregivers can return it to its original "owner" without any fussing from either child.

From very early on, children are remarkably compassionate. A very young child may hand a caregiver a crying child's pacifier or bottle, knowing it will comfort him. Children who spend time in care together become almost like siblings; in addition to moving primary caregivers to the next age group with their children, programs plan for a group of children to move together. Such programmatic decisions recognize the importance of adult and peer relationships for very young children.

Even the youngest children sense the rapport between their families and the people who care for them during the day. *Children reach for the photos of their families, covered in plastic and backed with Velcro® to stick on the wall. Families and caregivers find various ways of remaining in steady communication with one another and collaborate on behalf of the child. An erasable board lists who will be picking up a child, and when she slept, had a diaper change, and ate. Daily notes for parents at pickup time record special moments during the day. A password-protected class blog captures the day in photos and quick captions. Staff is accessible to families via phone, text, and email as well.*

Engagement with the World

At this age, children are taking in the world through their senses and their movements. They mouth whatever they can to learn more about whatever it is. They create problems to solve ("can I squeeze in there?") and work persistently to solve them. Toys form the basis of their daily curriculum, and those who work with infants and toddlers choose toys that enable children to make something happen. Teacher-caregivers avoid windup or electronic toys that require adult assistance to work. TV, computers, and video have no place in a room for children younger than two (American Academy of Pediatrics, n.d.), since children that young cannot make sense of the visual representations. Instead, caregivers provide rattles, balls, and toys with levers and buttons to push that give children the satisfaction of causing a reaction and enjoying its effect. Most children in this age range take pleasure in pulling apart puzzles with knobs; some of them enjoy fitting the pieces back into the puzzle as well. A favorite material is a clear plastic tube about 2 or 3" in diameter that is affixed diagonally to the wall and has a bucket of balls that the child rolls through the tube. Once children are walking, they love carts and carriages that they load up and push around the room.

Children snuggle soft toys, too, or simply carry them as they navigate around the room. They are on the cusp of pretending with them and with toy food and other objects. Young toddlers may not use these objects as intended and instead may hand one to an adult who thanks the child and returns it. Children engage in lots of similar reciprocal behaviors, which lay the foundation for conversations and turn-taking.

Knowing that children of this age concentrate on moving and figuring out new ways to move, *teachers have simple climbing equipment in the room itself – a carpeted ramp and a step to a low platform, for example. Or they may have an infant-size climber. Carpeted boxes challenge children to climb, too, and many children love climbing into them and sitting for a while to observe the activity of the room. Tunnels to crawl through offer the added attraction of hiding and being found.* With gross motor equipment in the classroom, children have constant access to climbing and otherwise stretching their physical abilities.

In addition to activity indoors, children from the very youngest on up thrive on outings beyond the classroom. Leaving the room for the outside world provides new input from the natural and social world. One teacher may go for a walk around the block with two children in a double stroller. Or two or three children who are walking may go with a teacher down the hall. The change of scenery refreshes everyone and the machines, people, plants, and animals beyond the classroom enrich the curriculum.

> **Throughout the day, the adults acknowledge babies as they narrate what the babies do. "You're climbing the stairs. Now you're sitting down. And now you're up again!" They go beyond acknowledging actions when they talk to a baby about what the child might think or feel, supporting the child's growing sense of self (Meins, 1997).**

These descriptions surround the babies with meaningful talk directed to the children themselves. Soon enough the children are pointing and asking some form of "What's that?"; they are eager for the name of everything they notice. Books and songs contribute to this rich verbal environment. Very young children do not benefit from a formal story time, but they thrive on the books a grown-up reads aloud to one or two children who cuddle on her lap. Songs come about spontaneously, and very young children thrive when adults sing to them. Lively songs make children move to the music; quiet ones are soothing. Music playing in the background can set a calming or frenzied tone for the room as a whole, and adults choose it carefully.

Curriculum in this room for the youngest children holds them in a safe and comfortable space from which they can explore and learn about the world of people and objects. It reinforces their family relationships as it expands to include the adults and children with whom babies spend their days. It finds a safe balance of stimulation that is neither too much nor too little. The curriculum teaches babies that they can trust themselves and others and that the world is a good place to investigate.

A crucial task for the young child is the construction of a sense of himself. The ingredients of this self-concept are seen as determining the quality of his encounter with other people, objects, and life in general. A major task of the teacher is to establish the child's trust in himself and in the educators.

See pages 51 and 54

Twos and Threes (2- to 3-year-olds)

Enter a room for twos and threes and you are in a busy place.

> The children move quickly and often unexpectedly, changing activity and mood more rapidly than many adults can anticipate. Twos and threes frequently have strong opinions but cannot articulate them clearly all the time. The adults who work with them face the challenge and thrill of knowing their young charges well and becoming adept at deciphering their signals. These early care and education professionals plan daily experiences that are both exciting and comforting.

Daily Curriculum

The twos and threes are fascinated by comings and goings, appearances and disappearances, and may protest strongly when their special person leaves after dropping them off in the morning. Their morning protests do not mean they will offer enthusiastic greetings at the end of the day, although they may. At this age, they become focused on whatever they are doing and may not want to stop. Besides, while saying goodbye in the morning is out of their control, they can decide for themselves if they want to say hello or not when their loved one returns. Working on issues of separation and return, twos in particular enjoy hiding and being found. They stuff toys into cabinets and remove them, only to stuff them in again. In this way, separation in its many guises becomes an essential part of the curriculum.

Most of the children in this age range are ready to run, jump, and climb wherever and whenever they can. Outdoor time on the playground or on outings is a must. During outings, walking or in a large wagon that holds six children, twos and threes take in the world, naming it, processing what they see, and asking "why?" Although they are famous for their short attention spans, they can stand enrapt, watching a bug or a truck for longer than most adults would imagine. In the playground or yard, these children stretch their capabilities, playing chasing games and figuring out slides and stairs, ladders and swings.

Their small motor coordination, too, has developed such that they can grasp the tiny knobs on some puzzles and can push large Lego® pieces together. Play-Doh® to squeeze and pound, sand to pour and dump, and finger-paint to squish are among their favorites, and their adults are careful to make sure these items are safe if children ingest them.

While twos in particular often declare "mine" about almost everything, they are not usually proprietary about their work. They happily paint on one large sheet of paper, spread out like a tablecloth over a low table. They use their entire bodies to paint, or to draw or glue, and usually make no claim to what they have created. Their interest is in the process, in the joy of moving and making something happen, not in the product.

By the end of the second year, most children experience a language explosion and the room is filled with talk from teachers and children. Children typically speak in single words and then two-word sentences, still using actions and gestures to communicate. Marisela, for instance, grabs an adult's hand and says "Walking!" to guide the adult to the toys she wants to use next. This newfound ability to communicate can turn what used to be a frustrated 18-month-old into a calmer child who can now use words to get what she wants. Nonetheless, tantrums are not necessarily a thing of the past, since a two-year-old's (and even a three-year-old's) intense emotions can make a child's language abilities temporarily inaccessible to her.

Interpersonal Connections

> The grown-ups with whom two- and three-year-olds spend their days are a source of stability and comfort. These adults also create exciting environments for the children to explore and experiences that engage them. Working with twos and threes means continually balancing what children know well and what is new to them, the soothing and the stimulating.

Before the children arrive, the adults who work with them arrange the space and put out materials, some of which the children know well and others that are new and intriguing. For example, Maria and her two co-workers set up cornstarch and colored water for four children. The water table is open with a small amount of warm water, funnels, and cups. The block area is stocked with simple shapes, animals, and vehicles. Each adult positions herself near one or two areas. As children arrive with a family member, Maria and her colleagues greet them and invite the parents to stay for a few minutes, if they can, to read to their child before saying goodbye. This eases children's transition into the day but is not possible for those adults who must rush to work.

Goodbye routines are vital for some children. Every day, Charles gives his mom a hug and goes with Maria, who holds him at the window as they wave goodbye to Charles' mom together. After she's out of sight, they linger for a moment before Maria asks Charles if he'd like to fix her some breakfast and off they go to the plastic food, wooden stove, and refrigerator. Maria has been Charles' primary caregiver since he was tiny. He continues to rely on her first thing in the morning and periodically throughout the day as he returns for refueling at the safe base she provides. However, he spends most of the day playing on his own and with the other children.

Charles and many other children in this age range find whatever their peers do to be contagious. One of them bangs on the table and they all bang their spoons. One child uses the potty and a troop of toddlers is ready to join her. In fact, toilet learning is not so hard when everyone is doing it. Much of their play is parallel to one another, but that does not mean that the other children are not important. Four children play on a large indoor structure, climbing up and sliding down. One child leaves to go to the Play-Doh® table, then another follows. Then the game is over and everyone disperses, although while they were playing they did not seem to be paying attention to one another at all.

The wise adult who works with twos and threes knows that peers are vital companions, especially when children have been together since they were babies. With this in mind, the grown-ups design spaces where children can interact in small groups – a sand table for four children, room for no more than four others at an art experience, and room for two at a snack table where children can help themselves. In small constellations, the children can pay more attention to one another and no one gets lost.

Children of this age can have a short fuse, and solutions to problems may be hard for them to see. For example, crowded together on the rug or in a family area, children may topple over on one another or crowd each other. The child who does not like that may bite, pinch, or kick self-protectively but unacceptably. To avoid undue conflict, adults plan time so children are neither rushed nor bored and design space that allows enough room for everyone.

Two-year-olds can solve many problems for themselves and do not always need an adult to resolve situations for them. The vigilant adult watches to see when the children need help and steps in to do just enough to prevent children from getting hurt or hurting one another.

Twos and Threes (2- to 3-year-olds)

Engagement with the World

The twos and threes are gathered in the back of the building, watching a garbage truck. They see workers toss in bags. The truck then does something almost miraculous. Part of it lowers and when it lifts, the garbage bags are gone, compacted, and in the truck. The children remain transfixed and continue watching until the workers finish the job and jump into the truck, waving to the children. This is curriculum.

What is interesting about a garbage truck? First of all, it is a part of the grown-up world that these children experience regularly. Second, the truck is big and makes a lot of noise. Third, and perhaps most important, the truck makes something disappear.

Back in the classroom several children play with toy garbage trucks in the block area. Others read a book about a garbage truck with one of the grown-ups in the room. Two other children pretend to be the truck, although only those who know the children and their experiences well would recognize the noises and motions as what they are. This unlikely curriculum fascinates the children. Using cardboard boxes, they will build a garbage truck that they can sit in themselves. They will branch out to include other trucks in their study, along with other jobs people in their community do using trucks.

The adults who work with these children know what to expect from their age group and, more importantly, observe closely and record what they see to design curriculum that fits their particular group. They stay in close touch with the families to know children better and for feedback about what works and what does not. For example, one day when the group sang "The Wheels on the Truck" (to the tune of "The Wheels on the Bus"), Marisela walked away from the group and lingered near the climber. The next day, though, her father told Maria that Marisela kept singing something that sounded like "Round and round." They realized then that although Marisela seemed disengaged from the group, she was paying attention from the distance she needed.

The twos and threes have a full day every day. Beginning with a separation from their families and with support from their caregivers throughout the day, they busily engage in a wide variety of experiences, often with or near one another. They play hard, they usually enjoy their food, and most of them sleep well. They are eager to engage in curriculum that interests them, and through it their language increases as does their knowledge of the world around them.

Preschoolers and Kindergarteners

The walls of the preschool and kindergarten rooms reveal the potential intensity and focus of the children's work and play. Their paintings show the growing representational quality of their thinking. Neatly printed tags with words the child dictated to a teacher accompany many paintings, since the children talk about their work. When their teachers display a record of what the children say, the signs accompanying their artwork and block buildings support the children's beginning understanding of the connection between written and spoken words. Charts document trips, class visitors, and the children's daily discussions. Dramatic play now takes a major role in their lives and this area and the block area have a large share of the room along with areas for tactile materials, art, drawing and writing, scientific investigations, manipulatives, cooking, and woodworking, plus a cozy reading area. Artwork and records of scientific observations hang in those areas. The room is abuzz with children playing in different areas, talking to each other or intently working on their own.

Daily Curriculum

The day begins as families drop off their children or as the children arrive by bus. Teachers greet them and their family members, and the adults exchange a few words about the day before and the upcoming day's activities. The teachers invite the children to the areas that are open at the start of the day. As with younger children, the teachers have set up areas of the room in advance, and children can plunge into an art activity, clay, or water. Children busily set up projects for themselves at the drawing and writing table and take out manipulative materials to use at another table. Later in the day, many more areas will be open for them to use. Some children quickly say goodbye to their family members; others are more reluctant. Some involve themselves immediately in constructing a motel with recycled boxes and glue. Others prefer to read a book or just sit on an adult's lap and watch the activity around them. One child pulls his mother to the attendance chart where he turns over his name. Only then will he give her a kiss and say goodbye. He remains at the chart, checking the room to make sure that all of the children there have turned over their names. If they have not, he approaches them for permission to do that job for them.

The children's day follows a predictable schedule, which the teachers post using photographs of the room and written labels for each part of the day. The writing and graphics support what the children already know and can anticipate and also inform them of any unusual occurrence, such as a special guest. At morning meeting, they talk about what will happen during the rest of the day and what they will do in relation to the current study. Now, most of the children are able to sit together and pay attention to one another as they take turns talking, although some children sit on bumpy pads that help them to sit. The meeting is short, because, although children have greater capacity to sit and listen than previously, they still gain more from active experiences.

As with younger children, outdoor time is vital for four- and five-year-olds. They swing from the bars, climb, and run and challenge themselves to slide down the pole like a firefighter. Some children hang back and would sit on a bench with the adults if the adults sat still. Instead, to learn as much as possible about the children in every setting, to supervise for safety, and to encourage physical exercise for everyone, the adults are up and about in the children's midst.

Preschoolers and Kindergarteners

Educators should provide opportunities for children to achieve mastery and a sense of competence in a range of tasks that are appropriate to their developmental stage. The chance to perform known skills and try out and perfect new ones can give pleasure as well as practice. Such tasks must be functional, not "make work."

See page 55

Often groups of three or four children go on small side trips with one adult to investigate something relevant to their area of study, to go to the public library, or to purchase something for the classroom. On one occasion, a small group visited the motel down the street to interview the owner. The teacher checked in advance to make sure it was a slow time for the hotelier, and the children generated their questions beforehand. Upon returning to the classroom from their trip, the children drew what they had seen and built a motel out of blocks. Then, using their drawings, block-building, and the photos they and the adult took during their visit to the motel, they presented their findings to the rest of the group. Since everyone wanted a chance to go, the teacher made a list and proceeded to plan for additional small group visits to the motel.

Lists, charts, photos, and drawings make sense to children in this age range. The children themselves represent the world every day through their dramatic play indoors and in the yard. They use that play, which is now more elaborate than when they were younger, to imagine all sorts of things and to make sense of their experiences. They use real objects, such as telephones, an old laptop, and notepads for the motel office they are building, and improvise when they lack an object they need.

Interpersonal Connections

Now peers are more important to the children than ever before. Indoors and outdoors, they play with each other, much of the time without needing an adult's intervention. One hears children negotiating with, "I'll be your best friend," or "Then you can't come to my party." These offer opportunities for adults to raise questions and have open discussions about friendship and how it feels to be a best friend or to be excluded from a party. Four-year-olds may be sure about whom they like and whom they do not, but they may not be clear about their reasons, and classroom relationships can shift depending on any number of factors. Some children know that they can have an infinite number of friends. Others believe they can only have one at a time.

The adult's job is to build community with these small people who care about each other and about their own place in the group. Skillfully led discussions air issues without preaching to children and shutting down conversation. As children continue to talk about what they think about friendship and how it works, they develop their ideas about what it means to be a member of their society, the classroom.

The adult's job is to build community with these small people who care about each other and about their own place in the group.

Engagement with the World

Preschoolers and kindergartners are ready to engage in long-term in-depth study of a multifaceted issue. Thinking about where they live and how parents earn their livings, this group of teachers chose to investigate tourism with the children. They began by asking the children what they would want visitors to their community to know about it. The children drew pictures that illustrated and added to their answers. Out in the community, they took many photographs that they categorized and considered with their drawings. They labeled the categories and, at a class meeting, discussed which categories were most important to include in brochures about the community and its highlights.

After a discussion of where visitors would stay, the children began visiting the motel. They set up a motel office in their classroom, and played visitor and hotelier there and with the motel they built from blocks. Their motel included a pool, a laundry, and a restaurant. In answer to a teacher's question about how people would get to the motel, they built a network of roads that drew visitors from the highway. They began to think about where else visitors would eat and extended the study to include restaurants. As part of this segment, they visited several parents at their restaurant jobs; one parent came to a class meeting to talk about his job as a cook. The children wrote thank-you notes to their guests and to all the people they visited and interviewed. They charted all the restaurants in town, categorizing them by type.

In one class meeting, the children talked about a favorite restaurant on the plaza and the class voted to visit the restaurant for lunch and interview the chef to learn how he decides what to cook for all the visitors to their town. On the day of the field trip the children noticed two adolescents asking for money or food right outside the door of the restaurant. The children wondered who these people were and why they were asking for help. Their discussions were further enriched when, back at school, the teachers invited a mother who knew a lot about homelessness to answer children's questions. The children learned that some people, even teenagers, do not have homes. After much discussion the class decided to have a bake sale and donate the money to the local homeless shelter.

Throughout their study, the children read, wrote, and learned a wide range of literacy, numeracy, and engineering skills. They sorted and counted and created patterns as they developed their brochures. Their collaborative block-building led them to measure, balance, and design as they developed a representation of what they saw on their trips. Through the restaurant and its cooking activities, they used mathematical skills and made scientific hypotheses and observations. Finally they learned together about where they live and how life works there. They were delighted to be part of their adults' world. Through this study, they also learned that although everything is not perfect, they can do something to make their community better.

In a thoughtfully organized classroom, young children can use their newfound skills and interests to work and play together and learn about their world. In so doing, they gain knowledge, apply concepts, and develop skills they will need throughout their educational experience. Most importantly, they do so with relish, because their classroom is an interesting place, one to which they and their teachers look forward to coming each day.

Making Connections

In this section we illustrate the connections between *Developmental-Interaction Approach* principles, the *New Mexico Early Learning Guidelines (ELGs)*, and the ongoing assessment of learning. We meet Juan and read about his work with older toddlers in a classroom serving 10 children.

Again, the *9 Principles of Practice* are:

1 ▶ **All educational work is grounded in an integrated understanding of human development and an acceptance that people learn in different ways and at different rates.**

2 ▶ **Children's families are an essential part of their education and care experience.**

3 ▶ **Diversity is a resource for adults and children.**

4 ▶ **Learning is social and children learn in interaction with each other, their educators, and their environment.**

5 ▶ **Both adults and children ask and pursue answers to challenging and worthwhile questions.**

6 ▶ **Children engage intellectually and emotionally with materials, ideas, and people – as individuals and as a community.**

7 ▶ **Adults guide and facilitate learning and respect children as playful learners, experimenters, innovators, explorers, artists, and communicators.**

8 ▶ **Children and adults advocate for fairness and justice.**

9 ▶ **Educators are lifelong learners and inspire children to become lifelong learners.**

Starting with *Principle 1*, Juan has studied child development theories and understands that the toddlers with whom he works learn in different ways and at different rates. Juan gained knowledge of each child and family through home visits and other activities he and his team created to build relationships with families. He understands the role of the educator is to initiate and maintain relationships with families. Juan continuously implements *Principle 2,* thereby increasing his knowledge and understanding of the children in his care. As he thinks about his classroom community of learners, Juan studies the *New Mexico ELGs* which serve to help him generate a tentative list of the knowledge and skills children in this age range will develop. He knows that planning involves individualizing for all the children in his care, which is *Principle 3.*

Next Juan makes curriculum decisions while studying children and comparing his observations with the *ELGs.* In the following example, we see how *Principles 4-7* are integrated. This entails Juan creating the social and physical environment of his classroom, planning investigations that emerge from the children and knowledge of the local community, and facilitating children's development in all domains.

We join Juan and the children midmorning:

*The older toddlers are just finishing their morning snack. Juan remains at the table with a clipboard on his lap as he listens to Micah and Marisa, two "best friends." These young children are sharing pita bread and hummus while chatting about the new class pet, a rabbit. Juan knows that by listening carefully to the children's conversation, he will learn about Micah's and Marisa's communication capabilities. He documents the rich conversation on his clipboard. Later, during nap, Juan returns to his notes, reflecting on the observation. Using the **ELGs** as his guide, he turns to the Beginning to Communicate section and notes that both children demonstrated the capability to "speak clearly enough to be understood" by their friend. Also, both were able to "express complex ideas" about building a home for the bunny. Juan also observed that Marisa consistently "initiated socially expected communication" by waiting until Micah was finished talking before she responded. Micah did not. He would start talking without taking turns in the conversation.*

*Turning to the **ELG** section on Beginning to Know About Ourselves and Others, Juan also documents that Micah and Marisa both demonstrate "increasing interaction skills with peers." In the room while children are napping, Juan spends the next 10 minutes writing down his description of the observation and his conclusions about Micah's and Marisa's developing communication and social skills. These notes go into their individual documentation folders. Based on this documentation, Juan makes the following decisions: 1) assist Micah with conversational turn-taking, and 2) begin a whole group curricular conversation with the idea of planning and building an outdoor home for the new class pet.*

*Juan comes to work the next day with books about rabbits from the local library. He also made arrangements for a neighborhood walk this week to visit the local lumberyard. The classroom is set up with today's morning activities: water table, easel painting, blocks, and table toys. Children and families arrive. Slowly the morning good-bye routine ends and three children join their other teacher, Kate, to prepare carrots and celery for snack as others play with the newly offered puzzles. Juan invites children to join him on the rug to read the book **Busy Bunnies.** Five join him, including best friends Micah and Marisa, while the remaining two children stay at the water table. The toddlers move with the text, hopping and munching as bunnies do. Although only five are on the rug with Juan, most of the children are listening from their activity area and moving to the text.*

After reading and rereading the story, Juan intentionally draws the children's attention to the illustrations of the homes in which rabbits live. One child returns to the puzzles and four stay with Juan as he poses questions about building a home for the new class pet, Daddy Bunny. Juan and these four toddlers go to the block area and begin building a home with blocks and boards. During block construction and conversation with the small group, Juan pays particular attention to Micah. He intentionally and gently guides Micah to listen to his friends and take turns talking as they discuss plans as a small group. When finished, Daddy Bunny is put into his new home. Throughout the day there is much dialogue and wondering as the children observe Daddy Bunny exploring his new home in the block area.

*By the end of the day, however, the toddlers decide that Daddy Bunny might need an even bigger home. He is not hopping around. Caring for the new class pet and thinking about its perspective illustrates **Principle 8**. The next day the morning starts with teachers Juan and Kate and two parent volunteers walking to visit the lumberyard. Using a wagon, they return with wood and chicken wire to create a home for Daddy Bunny.*

Juan used the **Developmental-Interaction Approach** principles to guide his work with the whole group and individuals within the group. The **ELGs** outlined the developmental expectations against which Juan compared his observations of children's accomplishments. The **ELGs** offered Juan a general idea of what to expect next and assisted him in identifying ways to support the children's learning and development. We see **Principle 9** in action as Juan engages in ongoing study of the children in his care while simultaneously creating a curriculum for playful learning for the toddlers.

Educators, such as Juan, who use the **ELGs** in this way, conduct systematic, ongoing, observational assessment that is criterion-based. They observe children in action, write factual, specific, and descriptive observational notes, and collect artifacts and work samples as evidence to support conclusions they draw when evaluating the child's progress. Based on these data, they formulate goals and objectives that are meaningful for the child and family.

Meals, transitions, and outdoor explorations, along with indoor play times, are opportunities for educators to integrate the **ELGs.** Children demonstrate their skills and capabilities in all that they do – not just in specified assessment tasks or content-related activities. They use language as they play with friends outdoors, converse at snack time, and transition from activity to activity. They problem-solve, focus attention, and apply their skills as they build with blocks, put together puzzles, look at familiar books, and take roles in dramatic play scenarios. They count and use concepts of quantity as they set the snack table, take attendance, or determine how many children are waiting to wash their hands. They recognize alphabet letters as they see their names in print on helper charts and name cards and often attempt to write letters as they participate in meaningful play such as going grocery shopping or writing notes to each other. Throughout, educators and children engage in the learning process together.

A cycle of such observation, reflection, planning, and implementation is the basis for all curricular planning for infants, toddlers, preschoolers, and kindergartners. Adults implement strategies and modify activities to better meet the needs of each child based on documented observations of each one's successes and challenges. Some children will need additional supports to participate in daily curricular experiences. Together with families and specialists, the educator makes informed decisions based on the authentic assessment process, to plan instruction and interventions as warranted. When considering referral for special services, the guidelines can help educators identify the need for **further** assessment with norm-referenced screening tools or other assessment instruments.

Beware of interpreting a single, specific behavior as evidence of achievement of a stage of development. Behavior which may seem to indicate that a particular stage of development has been reached may not actually represent functioning at that stage. Such apparent achievements are especially fragile because they are facades. The developmental-interaction approach focused on process, on providing the experiences that make it possible for children to try out, shift backward as well as forward, to create where necessary the opportunities for the kind of interaction that is essential for the assimilation of experience, the achievement of new integrations, and the resolution of conflict–in both the cognitive and emotional realms.

Conclusion

Educators advocate for quality curriculum for all young children. They understand that good teaching takes time, resources, and opportunities for ongoing reflection, dialogue, and enjoyment of this important work (Carter & Curtis, 2009). Early care and education professionals who follow the *Developmental-Interaction Approach* are aware of what they believe about children and how they learn; they have clear ideas about knowledge and how people acquire it. These professionals understand that all aspects of children's development – their physical, social, emotional, linguistic, spiritual, and cognitive development – are related to each other and interact with children's experiences, temperaments, and biology. They see that children's learning occurs in the context of the family and community and regard family members as partners in the children's educational experience. They have subject matter knowledge and a thirst for more knowledge and understanding. Through reading, observation, and practice, educators constantly increase what they themselves know about the world. They are committed to personal and professional growth. As responsible citizens who are deeply concerned about fairness and equity, adults who work with children look upon care and education as the route to children's active participation in democratic processes (Nager & Shapiro, 2007).

Children demonstrate their skills and capabilities in all that they do – not just in specified assessment tasks or content-related activities.

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The Education of Young Children:
A Developmental-Interaction Approach

Paper written by *Edna Shapiro* and *Barbara Biber* and published in 1972

In 1916, the Bureau of Educational Experiments was founded in New York City by Lucy Sprague Mitchell, her husband Wesley Mitchell, and colleague Harriet Johnson. Their purpose was to combine expanding psychological awareness with democratic conceptions of education. With a staff of researchers and teachers, the Bureau set out to study children – to find out what kind of environment is best suited to their learning and growth, to create that environment, and to train adults to maintain it.

In 1921, Mitchell's revolutionary *Here and Now Story Book* was published. Based on extensive observations of children and their use of language, *Here and Now* was followed by the emergence of a more child-centered approach in children's literature.

In 1930, the Bureau of Educational Experiments moved to 69 Bank Street in Greenwich Village and set up the Cooperative School for Student Teachers, a joint venture with eight experimental schools to develop a teacher education program to produce teachers dedicated to stimulating the development of the whole child.

In 1937, Mitchell set up a Division of Publications to produce books for and about children. The Writers Laboratory, a workshop designed to bring together professional writers and students of the Cooperative School for Teachers, was also formed. Early Writers Lab members include Ruth Krauss, Margaret Wise Brown, and Edith Thacher Hurd.

In 1950, the Cooperative School for Teachers was certified by the Board of Regents of New York State to confer the Master of Science degree. To reflect this change the Bureau of Educational Experiments was renamed Bank Street College of Education.

In 1954, the School for Children (SFC), a full-scale elementary school, began with one class. SFC gradually expanded to include children aged three through 13.

Barbara Biber (1903-1993) joined the staff of the Bureau of Educational Experiments in 1928 and became one of its key members, serving in numerous policy-making and administrative capacities. She became chair of the Studies and Publications Committee, precursor of the Research Division, in 1933 and served as chair of the Research Division until 1963. That year she was named Distinguished Research scholar at Bank Street and continued her research in mental health and child development. Dr. Biber continued to play a role at Bank Street until her death in 1993. The papers of Dr. Biber reflect her leadership roles at the Bureau of Educational Experiments and Bank Street College and her contributions to the study of the psychological development of children and related fields.

Edna K. Shapiro (1925-2005), Distinguished Research Scholar Emerita, spent the greater part of her career at Bank Street College of Education, which recognized her work with an Honorary Doctorate of Humane Letters in 1993. Joining the Research Department in the 1950s, Dr. Shapiro and her colleagues conducted a major study examining whether and how different kinds of schools affected children's learning experiences. The collaborative product of that study, The Psychological Impact of School Experience, is considered a classic. Dr. Shapiro played a crucial role in developing and describing Bank Street's developmental-interaction approach to the theory and practice of education, reflected in numerous articles and two co-edited volumes, *Cognitive and Affective Growth* (with Evelyn Weber) and *Revisiting a Progressive Pedagogy* (with Nancy Nager).

The Education of Young Children:
A Developmental-Interaction Approach

Edna Shapiro and Barbara Biber

The revival of interest in the theory and practice of teaching young children has produced an assortment of preschool and primary programs, a good deal of lively, even bitter, controversy, as well as confusion as to what sound educational programs for young children can and should be. Each program is derived, explicitly or implicitly, from theoretical conceptions about children's development and learning and each has its goals or ideas as to the qualities and capacities the program is designed to foster in the participating children. The plethora of programs reflects a lack of consensus about what the basic issues in child development, the significant parameters of learning, and the constituents of a psychologically sound educational experience are. Such a lack of consensus also indicates a lack of awareness that programs which emphasize a particular facet of children's development (often some specific "deficit") are inevitably influencing other, perhaps equally significant, aspects of development.

One approach to the education of young children, which is based on a concept of education as a broad system of influence, is that associated with Bank Street College of Education. For the past fifty years educators and psychologists at Bank Street College have been evolving an approach to the education of young children. The present paper is an attempt to spell out the underlying premises, the goals, and some of the characteristics that distinguish this approach from others. It is not so specialized as to be limited to a single educational institution; but, while its broad outlines and theoretical bases are shared by a number of other psychologists and educators, the long-term experience with putting the theory into practice is, perhaps, one of Bank Street's unique contributions.

The original Bank Street program was designed for very young children. In the 1920s the nursery school, under the direction of Harriet Johnson, served children as young as eighteen months. In the mid-fifties the School for Children extended its programs to include the elementary years. The programs were originally designed for middle-class urban children – in fact, privileged children whose parents could afford to send them to private school. The programs have been adapted to meet the constraints of public elementary schools through workshops[1] and consultation services;[2] the special requirements of a day care program (Polly Miller Day Care Center, established in 1957); a program for preschool children and their families who have a background of poverty (Bank Street College Early Childhood Center, established in 1966); and, since 1968, extensive consultation in public schools under the auspices of Project Follow Through.[3] The Follow Through program has involved extension of the Bank Street programs in the widest sense, incorporating a broad range of school systems which vary in size, geographic location, and type of population.

We are concerned, then, with an approach to education for preschool and elementary school children, both privileged and very poor, white and non-white. The approach is not static; it can be and is being accommodated to the requirements of different populations of children. At the same time, its central concepts and goals have remained consistent.

Introduction

The main focus of American education since the mid-1960s has been on methods of educating the very young minority group child. Such methods have been viewed as an effort to counteract the effects of deprivation, and the criterion of competence has been the performance of the middle-class child. Indeed, much of psychological theory and educational practice has been based on knowledge of middle-class children. In recognition of this, psychologists and educators are discovering that their assumptions and basic conceptions about children in general require considerable revision. While they recognized long ago that the child must be differentiated in terms of his age and stage of development, they have only recently begun to differentiate the effects of variations in social and cultural background.

The unprecedented interest in and federal funding for programs and research in early education, especially for children from backgrounds of poverty, has created a new opportunity as well as a crisis for social scientists, particularly psychologists in the field of child development. On the one hand, the need is clear and the chance has been given to do something about it; on the other hand, the data are inadequate, the theory is ambiguous, and opinion about timing, sequence, content, and methods is in conflict. While all are agreed that we need more research, new programs are of necessity being formulated, funded, and evaluated.

Different conceptions of childhood govern the kinds of educational experiences that are advocated for children. The concept of childhood as a distinct period of life, worthy of consideration in itself and necessitating institutions to nurture it, is, as Phillipe Ariès has shown, a relatively modern idea.[4]

Evelyn Beyer offers a light-handed survey of conceptions of the child that have influenced education, especially of young children.[5] In the early years of the Industrial Revolution in England, children whose mothers were working in the textile mills were gathered in large groups to learn the Bible and the alphabet. The guiding principle was that children have souls that must be saved. Later in England the Macmillan sisters saw that children's bodies also needed care, and teaching health habits became part of the curriculum. It was the Europeans – Pestalozzi, Froebel, Rousseau, and later Montessori – who promulgated the idea that children have minds. In this country, John Dewey, by developing the concept that children learn through experience, gave status to the role of experience in cognitive development. The impact of Freud can be seen as the discovery that children have feelings – which motivate or disrupt, are obvious or hidden. Present-day theory presumably represents an amalgam of these ideas; the child has a soul, a body, a mind, and feelings; furthermore, he is unique, an individual.

Nevertheless, there seems to be a bifurcation of contemporary educational theory and practice – a focus on intellectual competence and development with little consideration of emotional factors, and an opposing position which stresses the crucial role of affective functions in intellectual development. In writings about elementary education, this axis has been termed the "education model" vs. the "mental health model,"[6] or "the new curricula" vs. "education in depth,"[7] or the "traditional" vs. the "modern."[8] The same divergence exists in preschool education though the terminology is reversed. Preschool programs that emphasize broadly conceived developmental goals and learning in the context of a guided play program are referred to as traditional, while those in which the children are taught by more didactic methods are called innovative or experimental.

Lawrence Kohlberg sees "three broad streams of educational thought which vary from generation to generation in their statement, but which are each continuous in starting from the same assumptions."[9] The first is termed a "maturationist" stream. "What is most important in the development of the child is that which comes from within him and [therefore] the pedagogical environment should be one which creates a climate to allow inner 'goods' (abilities and social virtues) to unfold and the inner 'bad' to come under the control of the inner good, rather than to be fixated by adult cultural pressures."[10] Kohlberg points to Rousseau as the originator of this maturationist or unfolding point of view, and he sees it represented today in the followers of Gesell and Freud. Perhaps the foremost example of a school based on these principles is A.S. Neill's Summerhill.[11] Dennison, Gattegno, and less clearly Holt and Kohl seem also to argue that the adult's role is primarily not to impede children's learning – to facilitate and inform, but to stay out of the way.[12] (Although neither Gesellian nor Freudian, these writers take as the paradigm of learning the child's acquisition of speech, a uniquely complex accomplishment which requires the presence of speaking adults but is apparently not taught.)

The second stream in Kohlberg's formulation is "cultural training": "What is important in the development of the child is his learning of the cognitive and moral knowledge and rules of the culture, and [therefore] education's business is the teaching of such information and rules to the child through direct instruction.[13] This view can be traced from John Locke to Thorndike, Watson, and Skinner; current versions for preschool education include that of Bereiter and Engelmann as well as operant conditioning programs such as those of Bushell.[14] Similarly, the widely acclaimed television program *Sesame Street* bases much of its teaching of letters, numbers, and simple concepts on the principle of frequency, albeit with humor and sophistication. In general, elementary education in America follows a "cultural training" point of view, though the implementation is more haphazard and the rhetoric more mixed than in programs formulated and run by behavioral scientists.

The third stream of educational thought, according to Kohlberg, is the "cognitive-developmental" or "interactional" view, which is based on the premise that "the cognitive and affective structures which education should nourish are natural emergents from the interaction between the child and his environment under conditions where such interaction is allowed or fostered."[15] Kohlberg aligns himself with the cognitive-developmental point of view and elaborates its implications for preschool education.

Cognitive-developmental theory is making an increasingly powerful impact on education, both in the preschool and elementary school. A number of writers have discussed the relevance of Piagetian theory to educational practice, for example, Wallace, Sigel, and Furth.[16] The Piagetian framework underlies the approach of the British Infant Schools.[17] Specific curricula based on Piagetian concepts have been devised for the preschool, for example, by Kamii, Lavatelli, and Weikart and his associates.[18] Jerome Bruner's influential reformulation of educational questions and imaginative curricula have had considerable impact on educational theory and, in some cases, on practice in elementary schools.[19]

The formulation which is being explicated here has much in common with the cognitive-developmental viewpoint and shares many of its basic assumptions, for example, the emphasis on the child's interaction with the environment, and the significance of stages of development involving the reorganization of cognitive structures. Indeed, it would be tempting for us to borrow the term "cognitive-developmental" but it would be misleading because cognitive-developmental theory is primarily focused on the parameters of cognitive development. While Kohlbert notes that cognitive-developmental theory deals with affective as well as cognitive structures and that "cognitive and affective development are parallel aspects of the structural transformations undergone in development,"[20] the emphasis of interest, argument, research, and practice is on the cognitive. Furthermore, in our approach cognitive and affective functions are seen as interactive rather than parallel.

A further distinction between cognitive-developmental theory and the approach to be described here is that the former, in spite of its emphasis on the child's interaction with the environment, pays less attention (like other stage theories) to characterizing the nature of that environment than to patterns of response and modes of internal organization. Kohlberg states that "cognitive-developmental theory, itself, is broadly compatible with a diversity of specific cognitive-stimulation programs, ranging from Moore to Montessori…."[21] In the approach described below such a broad spectrum of educational environments is not accepted as equivalently appropriate.

To denote the distinctive features of this approach, we call it the *developmental-interaction* approach. Developmental refers to the emphasis on identifiable patterns of growth and modes of perceiving and responding which are characterized by increasing differentiation and progressive integration as a function of chronological age. Interaction refers, first, to the emphasis on the child's interaction with the environment – adults, other children, and the material world, and second, to the interaction between cognitive and affective spheres of development. The developmental-interaction formulation stresses the nature of the environment as much as it does the patterns of the responding child.

This approach flows from three main sources: (1) The dynamic psychology of Freud and his followers, especially those who have been concerned with the development of autonomous ego processes, for example, Ann Freud, Erikson, Hartmann, Sullivan, and Rapaport. (2) The gestalt and developmental psychologists who have been primarily concerned with cognitive development, like Wertheimer, Werner, and Piaget. These theorists have, for the most part, been only incidentally interested in pedagogic issues per se. (3) The educational theorists and practitioners who have themselves been influenced by these psychologists or who have developed a functional and/or psychodynamic approach of their own, for example, John Dewey, Harriet Johnson, Susan Isaacs, Lucy Sprague Mitchell.

Freud, Erikson, Werner, and Piaget, while differing in their respective emphases on affective or cognitive processes, all hold that development is characterized by qualitative shifts in modes of experiencing and reacting, that such patterns, or stages, occur in invariant sequence, the earlier being necessary precursors for the later. Although some attempts have been made to integrate these formulations,[22] many theoretical and practical questions remain. To specify an optimal environment, or environments, in which the delicate balance is sustained between discrepancy and match to the child's developmental stage, is beyond the scope of this paper. Our goal is to indicate the possibilities for an integration of this kind, and some of the steps that have already been taken.

Any set of educational practices can be seen as a system, even a technology, designed to achieve certain specified ends. The aims of education have been defined and described from many different perspectives, but any definition is necessarily a description and justification of the human qualities the educational system values. The characteristics and capabilities to be fostered are viewed as assets, and those to be discouraged as deficiencies. Built into the system are implicit or explicit assumptions about what young human beings are like, the nature of processes of growth and development, and how learning is facilitated. When psychological theories are put to practical use and the lives of children shaped by their application, it becomes important to make such assumptions explicit and to specify the psychological processes being fostered. In so doing, one treads a rough path between knowledge and opinion. Certain facts seem well substantiated, many are open to question, others remain articles of faith.

Furthermore, no system is universally applicable. The humanistic values intrinsic to the developmental-interaction approach are not subscribed to by all societies. Its values and goals are, however, generally acceptable across the broad sweep of Western culture; it is the implementation of the goals that must be differentiated according to the social, cultural, and developmental status of the child population involved.

The school is seen as responsible for fostering the child's psychological development in a broad sense, as encompassing affective and social as well as cognitive development. It is a basic tenet of the developmental-interaction approach that the growth of cognitive functions – acquiring and ordering information, judging, reasoning, problem solving, using systems of symbols – cannot be separated from the growth of personal and interpersonal processes – the development of self-esteem and a sense of identity, internalization of impulse control, capacity for autonomous response, relatedness to other people. The interdependence of these developmental processes is the *sine qua non* of the developmental-interaction approach.

Educational goals are conceived in terms of developmental processes, not as concrete achievements along the route to a specified accomplishment. School practices, that is, teaching methods, curriculum content, administrative procedures, should implement a rationale based on developmental principles.

Such an extended definition of the role of the school makes its central responsibility that of fostering the development of ego strength, the individual's ability to deal effectively with his environment. Competence is central to the idea of ego strength, though to have ego strength the individual must perceive his competence as valid, and must be able to use it in effective interaction with other people and work. Furthermore, the ingredients of ego strength and the associated competence fostered by the school must be appropriate to the child's developmental stage.

As a corollary, the school is also responsible for contributing to the child's development of autonomy. Again, the concept of the autonomous individual must be differentiated in terms of developmental stages, but it encompasses a concept of the self as unique, with thoughts, feelings, responses; with the ability to experiment, to initiate, to risk failure, to make choices, to doubt, and to contradict.

In the developmental-interaction approach to education, the school also promotes the integration of functions rather than, as is more often the case, the compartmentalization of functions. Thus the school supports the integration of thought and feeling, thought and action, the subjective and the objective, self-feeling and empathy with others, original and conventional forms of communication, spontaneous and ritualized forms of response. It is part of the basic goal and value system of the school to stimulate individuality and vigorous, creative response.

These broadly sketched responsibilities must be specified in terms of the developmental processes that are to be fostered and sustained. They must also be translated into concrete classroom processes and practices. The following section illustrates a first level of this translation. A set of goals is outlined with a schematic indication of the capacities and characteristics whose cultivation the school, as conceived here, would see as its responsibility.23

General Goals for the Education of the Young Child
(preschool and elementary years)

1. **To strengthen the commitment to and pleasure in work and learning,** for example

   a. to sustain curiosity about the world

   b. to have the intrinsic motivation to pursue selected goals, and pride and pleasure in increasing competence

2. **To broaden and deepen sensitivity to experience,** for example

   a. to be open and responsive to environmental stimuli

   b. to cultivate the enjoyment of sensory-perceptual-motor experiences

   c. to increase discrimination of qualities of the environment

3. **To promote cognitive power and intellectual mastery,** for example

   a. to search for order and interrelationships among aspects of experience

   b. to develop language as a tool for thought and a means of communication

   c. to be increasingly able to deal with representations

   d. to increase the repertoire of knowledge and the ability to make functional use of it

   e. to perceive problems of different kinds and develop appropriate solution strategies

4. **To support the integration of affective and cognitive domains,** for example

   a. to accept the relevance of subjective and objective experience, rational and non-rational processes

   b. to have an open-ended "play" orientation to intellectual experience

   c. to transform experience into personally meaningful and communicable forms

5. **To nurture self-esteem and self-understanding,** for example

   a. to have a sense of individuality and personal identity

   b. to identify with own origins – as a member of a sex, a family, an ethnic or racial group

   c. to know and accept own feelings, wishes, aspirations, capacities, motives and fears

   d. to feel able to influence the course of events

6. **To encourage differentiated interaction with people,** for example

   a. to be capable of trusting other human beings, and to withhold trust when appropriate

   b. to relate to other children and to adults as non-stereotyped individuals

   c. to communicate with others, express feelings, ideas

   d. to enjoy human interchange

   e. to join in productive enterprise with others

Finally, the school must provide a social framework that allows for maximum autonomy of the participating individuals while preserving the requirements of group functioning, in order:

7. **To promote the capacity to participate in a social order in the classroom and in the school,** for example

   a. to learn that trust, respect, and responsibility are reciprocal

   b. to participate in the search for solutions to practical problems

   c. to accept a rational system of controls and sanctions

Generally stated, it is a goal of the school to minimize the gap between capacity and performance by providing an environment that allows and encourages children to do what they are capable of.

6 Principles

Six principles are basic to the developmental-interaction approach.[24] *First,* that development is not a simple progression from less to more, not a monotonic function of growth over time, nor simply an unfolding of built-in structures; rather, the course of development, following Werner and Piaget, is

1 **... characterized by qualitative changes or shifts in the individual's means of organizing experience and coping with the environment. [It] may be viewed, overall, in terms of increasing differentiation and hierarchic integration. ... This general line of development can be discerned within different stages and with regard to the pattern of growth in various spheres (for example, motor activity, emotional development, perceptual-cognitive functioning).[25]**

Crucial here is the concept of stages and the transformations that occur as a result of progressive integration in a hierarchic sequence. All stage theories can be placed in a time sequence in which modal ages indicate when the shift from one stage to the next is assumed to occur. But all stage theories, including ours, disavow the immutability of such age indications, pointing to the influence of cultural, genetic, and experiential variables. Thus age statements are approximate.

Developmentalists generally agree that there are probably optimal periods for the development of certain functions, but that these periods are not necessarily critical.[26] There are undoubtedly limits on the reversibility of malfunction in development, on how much reparation can be made for omissions or distortions in developmental sequence. The sheer amount of deprivation as well as its timing, and the length of time elapsed since the optimal periods (with consequent cumulation of less adequate functioning) must be considered. Furthermore, development in cognitive, motor, and affective spheres is not equivalent. While there is evidence that retardation in locomotion due to deprivation of opportunity for locomotion and motor experience is not permanent,[27] we know less about possible associated effects and still less about the effects of cognitive and emotional deprivation.[28] It seems likely that the consequences of lack or inadequacy of affective relationship, especially in early childhood, may not be reparable. The interweaving of affective and cognitive development in the early years is not yet clearly understood, nor is it possible to disentangle these aspects in reports of feral children or those reared under conditions of severe deprivation.

Nevertheless, enrichment programs for children of the poor are based on the hypothesis that one can make up for lost time; that if an individual has missed certain of the experiences deemed crucial for the development of specific cognitive functions, it is possible, by manipulating the environment, to provide the experiences that will facilitate development of those functions.[29] It is in the definition and detailing of appropriate manipulation as well as in the diagnosis of dysfunction that the differences among theoretical formulations and programs may be seen.

6 Principles

Developmental stages are conceptual tools for describing and establishing connections among apparently diverse forms of behavior; part of their usefulness lies in their power to show pattern in diversity. Or, as Kessen has suggested, they can be viewed as theoretical models peculiar to certain age levels.[30] But the individual can never be placed at a single point on a series of developmental continua. His ways of organizing experience and dealing with the environment, except perhaps in earliest infancy, are neither consistent nor unified. A *second basic principle,* therefore, is:

2   **An individual does not operate at a "fixed" developmental level, but manifests in his behavior a range of genetically different operations. Earlier or more "primitive" modes of organization are not eradicated, but become integrated into the more advanced modes of organization.[31]**

Since stages are hierarchic integrations, more advanced stages incorporate the features of structures found at lower stages. Individuals are assumed to have a hierarchic preference, that is, to function characteristically at the highest level available. While a certain consistency of functioning is to be expected and is essential to the concept of stage, the individual's capacity to utilize different operations appropriately may be considered an index of his developmental maturity and creativity.[32]

A major issue for all stage formulations is the conceptualization of how individuals progress from one stage to another. The rules of transformation and progression are far from clear. The *third principle* concerns this progression:

3   **Progress from earlier to later levels of functioning in any domain (emotional, intellectual, or social) is characterized by moments of equilibrium in which the individual's schemata are adequate for the task at hand, and by moments of instability in which currently operative structures are breaking down but new ones are not sufficiently developed to take over completely. [33]**

A major part of the educational task is to provide a balance between experiences that help to consolidate the child's understanding and those that provide desirable, growth-inducing challenge, what Stinchcombe has called "developmental pressure."[34]

From the fundamental proposition that development is a function of the interaction of organism and environment a *fourth principle* is derived:

4   **The autonomous ego processes of the growing organism synchronize with increasingly strong motivation to engage actively with the environment, to make direct impact upon it and to fulfill curiosity about it.[35]**

The possibilities for engagement expand as the child develops; most contemporary theorists concur in describing a sequence from active, physical body-centered to primarily perceptual and conceptual modes. Or, in Jerome Bruner's terminology, from enactive, to iconic, to symbolic representation.[36] Again, it is not that one mode supplants the others, but that each mode is a way of knowing and responding to the environment and becomes part of the individual's repertoire.

The motivation for cognitive activity is an intrinsic and fundamental aspect of development. We draw here on White's "effectance motivation" and Piaget's concept of assimilation as active incorporation of reality data into the individual's schemata.[37]

The growing person attempts to achieve control of the environment by imposing order on experience. The search for meaning, while undoubtedly shaped by individual differences, is facilitated or impeded by the characteristics of the environment – its receptivity to the child's attempts to make direct impact, its meaningfulness, the regularity, type, and amount of stimulation it provides. These are determining factors in the fate of developing ego processes.

Fifth, the child's sense of himself as unique and independent is constructed from his experiences with objects and other people. Following Mead's early statement:

5 **The self is both image and instrument. It emerges as the result of a maturing process, in which differentiation of objects and other people becomes progressively more refined and self-knowledge is built up from repeated awareness and assessment of the powers of the self in the course of mastering the environment. The shape and quality of the self reflect the images of important people in the growing child's life.[38]**

This is, perhaps, the most widely agreed upon proposition in psychology today. Theorists of almost all persuasions, while they may conceptualize the sequence and process differently, agree that a crucial task for the young child is the construction of a sense of himself. The ingredients of this self-concept are seen as determining the quality of his encounter with other people, objects, and life in general.

The **sixth principle** is equally central:

6 **Growth and maturing involve conflict. The inner life of the growing child is a play of forces between urgent drives and impulses, contradictory impulses within the self and demanding reality outside the self. The resolution of those conflicts bears the imprint of the quality of the interaction with the salient life figures and the demands of the culture.[39]**

In this framework, conflict is seen as an inevitable part of growth, and the child's emotional and impulse life is inextricably part of his growth and development. Thus by this view, both affective and cognitive development are shaped by the nature of the individual's encounters with the environment.

Any developmentally based theory counters an assumption of simple isomorphism between present and future behavior or mode of organization; that is, the behavior that is appropriate to a particular stage may be a necessary precursor of a later stage, but there often is little phenotypic similarity between them. There may in fact be an apparently inverse relationship.

Furthermore, behavior which may seem to indicate that a particular stage of development has been reached may not actually represent functioning at that stage. The distinction made a number of years ago by Werner[40] between process and achievement is crucial in formulating educational programs as well as in evaluating them.[41] In terms of this distinction, overt behavior represents the peak of a pyramid. But behavior can be misleading since forms can be taught and learned, bypassing the substrate and giving the erroneous impression that the individual has reached a certain point in the developmental sequence, has "achieved" a state of development. Such apparent achievements are especially fragile because they are facades. The educational programs associated with the developmental-interaction approach are focused on process, on providing the experiences that make it possible for children to try out, shift backward as well as forward, to create where necessary the opportunities for the kind of interaction that is essential for the assimilation of experience, the achievement of new integrations, and the resolution of conflict—in both the cognitive and emotional realms.

The teacher is the most important figure in the developmental-interaction approach because it is she who creates the climate in the classroom, the physical and psychological learning environment of the young child's life in school.[42,43] The physical aspects of the classroom – the décor, the arrangement of furniture, the nature, variety, and accessibility of materials – are a statement about how the room is used and the way in which the teacher expects the children to be engaged in learning. The task of equipping the classroom is not a mechanical operation performed at the beginning of the year. On the contrary, the teacher gauges the children's changing tolerance and need for stimulation and adjusts the room accordingly. The arrangement of the room should be flexible enough so that furniture may be moved to serve different purposes. The order in the room, especially for the young child, is also a way of teaching. It should be logical and explicit; things are put together that go together, and the rationale is made clear to the children.[44] There should be a large variety of materials, structured and unstructured, mass-produced and home-made. Materials serve both for learning and for the expression and re-expression of what has been learned and felt. The teacher's arrangement and equipment of the classroom is one manifestation of how she views her role and how she structures the children's environment.

A classroom also tells us something about the teacher's attitudes and theories about how children learn, her expectations for the children she is teaching, her definition of appropriate learning experiences and curriculum, the kinds of behavior she values and deplores, and the ways in which she shows approbation and displeasure.[45] The teacher is the significant adult who transmits to the children what they are supposed to learn, and whose relationship with them mediates their learning. In the developmental-interaction view, the teacher is one of the significant others through whom the child learns to view himself.[46]

Teachers vary in personal style, temperament, cultural background, and individual experience; they bring different talents and limitations to their task. In the developmental-interaction approach, which de-emphasizes the persona of the teaching role, the teacher's personal qualities become more important. This framework is compatible with many different kinds of personalities and styles of teaching. The overriding principle, however, is that the teacher should respond and relate to the children as individuals.

Within the limits set by the principal and the mores of the school, the teacher is the authority in the classroom. The teacher's exercise of authority is not an arbitrary function invested in her role, but a rational function that is dependent on group goals and relationships. A system of controls is still necessary – as a safeguard against excessive impulse expression and to protect the work, the play, and the life of the group, but it is built on positive motivation rather than submission to power, on a functional coordination of instruction and management rather than on control by rules and rituals. The teacher enlists new levels of motivation to take into account the children's capacity for control and to help them understand the functional necessity of classroom rules. The authority role of the teacher, as conceived in the developmental-interaction approach, includes supportive as well as controlling functions. Though it is possible to definite the essential elements of a supportive role in general, its enactment must vary according to the child's out-of-school experience.

It has been assumed that the young child's perception of and relation to his teacher is based on his expectations about and reactions to adults, especially his parents. When the family is closely knit, and the child has been cared for primarily by his parents, teacher-pupil relationships tend to be rather intense. Teachers have expected to build on the positive aspects of the family foundation, establishing distinctions, providing a less emotionally charged though stable and meaningful relationship. On the other hand, children who have not had this kind of family life may have quite different expectations about adults. The teacher's task then becomes correspondingly different; she must build her relationship with the child from a different foundation. A major task is to establish the child's trust in himself, in the teacher, and in the school, since the mutual trust between the teacher and the child is the precondition for a supportive authority role.

A relationship of trust has universal implications: adults whom the children can depend on, who mean what they say, who will keep their word. But in the classroom a supportive relation is built on the teacher's knowledge, skills, and her expectation that

... growth will be gradual, wavering, regressive, uneven ... Recognizing conflict as inevitable in the growth process, she is not surprised by children's fear, weaknesses, guilt, anxiety. She is able to help children feel comfortable in having their troubles, doubts, shame known to her with the confidence that they will not thus be downgraded in her eyes. She becomes a source of emotional support even when she can only listen to and understand problems that are outside the scope of solution within the school.[47]

The teacher who follows the developmental-interaction approach is not just "good with children." She functions in multiple roles: she is a member of the teaching staff of the school; she is a liaison with other professionals who provide special services, for example, the curriculum specialist, the social worker, the psychologist, the guidance worker, and also most importantly, with the parents of the children she is teaching. Also, in many schools the teacher is herself receiving consultation from in-school and out-of-school educators and psychologists (as, for example, in the Follow Through Program). She is expected to have the capacity to relate to many different kinds of children, to diagnose their needs and strengths; at the same time, she is expected to be able to relate well to adults – to inform, give guidance, to accept supervision and suggestions, and at the same time, to be a colleague. She is expected to be both captain and lineman, giver and receiver, teacher and learner. A full discussion of the intricacies of these role expectations and the contradictory demands made on teachers would be out of place here. It is pertinent to note, however, that teaching in the developmental-interaction approach to education, perhaps more than other educational approaches, requires the integration of personal and professional capacities.

In this approach to early childhood education, work and play are interwoven: work is not onerous, play is not frivolous. The belief in and respect for work, the importance of workmanlike attitudes and concern for craftsmanship accompanies a corollary conviction that the child's play is important and purposeful and can be a medium for learning about the physical and social environment through symbolic recreation.

A child working may be matching pictures in a Lotto game, sweeping the floor, building a garage out of blocks, weighing pebbles, or writing a story. One of the ways in which the teacher supports the child's work is by protecting his involvement and enabling sustained concentration. One of the first rules, in preschool as well as in later years, is that a child who is working should not be interrupted. The work that children do in school should not be all of a kind. The teacher and the school should provide opportunities for children to achieve mastery and a sense of competence in a range of tasks that are appropriate to their developmental stage. The chance to perform known skills and to try out and perfect new ones can give pleasure as well as practice. Such tasks must be functional, not "make work." In the early years they tend to be simple – setting the table, taking care of classroom animals, cleaning up. In later years jobs can be more complicated and can fulfill a need in the school or community.[48] Through such jobs children can be introduced to the ethos of work, and share with adults its responsibilities, repetitiveness, and rewards.

Play too can be responsible, repetitive, and rewarding. A hallmark of play is that it is enjoyable, which perhaps is why, as Sutton-Smith suggests, it is often held in disrepute in the school context.[49] Early educational interest in children's play stressed the joy and wonder of play, as well as the opportunity it offers to express and work through emotional uncertainty and difficulties.[50] Under the influence of Piaget's formulation,[51] and as a reflection of the current Zeitgeist, play has been hailed for its role in cognitive development.[52] From our point of view, it is this duality of function in play that makes it crucial in the child's life and that should make it central in school.

Play allows for the fusion of the subjective and objective, the suspension of logic, and the admission of the impossible; it permits symbolism of gesture, action, plastic construction, and also the elaboration of soliloquy and dialogue. At the same time, play is a vehicle for the active assimilation of experience, a system of transformation constructed by the child in his efforts to know the world through the taking of roles and the adaptation of available materials into essential props; the construction of imaginary landscapes with real roads, bridges, post offices, and gas stations constitutes a world in which roles can shift, landscapes can metamorphose, rules can be broken. The teacher of the young child does not move too quickly to impose reality or logical constraints but takes a cautious path between stimulation and interference. She offers information and materials so that an intent can be realized; she suggests ways of combining individual activities so that more content can be incorporated, and more complicated problems tackled.

When older children are learning about the life and mores of another culture, the influence of particular geographic conditions on a way of life, or the thought of another era, the use of dramatization can be invaluable. Focusing on the concrete can make the abstract vivid; encouraging the expression and attribution of feeling and identification with distant or alien roles can give substance to shadowy historical ideas. The importance of stimulating connections between emotional and intellectual learning, of treating the child's affective responses as a legitimate and integral part of his learning, has been emphasized by Jones.[53] For the older as well as the young child the synthesis of feeling and thinking is essential for maximum engagement in learning.

Especially for the young child, play has been surrounded by controversy. Many behaviorally oriented programs de-emphasize play altogether and focus on the learning of content and skills that are directly related to future curricula. Montessori programs call for circumscribed individual activities with carefully selected materials; other programs consider play so crucial to the child's intellectual and emotional development that when children do not seem to play spontaneously, or not as it is conceived they should, the teachers teach the children how to play.[54]

In the developmental-interaction approach, a child's play is viewed as a reflection of his relationship to the world outside himself, and as a "natural" medium for exploration, discovery, and consolidation of learning. Therefore, when a child does not play, serious theoretical and practical questions are raised. While sustained, elaborate symbolic play is a common activity for middle-class children, not all children play in the same way. Observers of children from severely impoverished backgrounds in Israel and various sections of this country have found that many of the children did not play in the sense meant here.[55] They engage in repetitive, often motoric activity with toys, but do not spontaneously make constructions, use their constructions in their play, take roles, or invent situations and stories with action and dialogue. We do not know enough about the precursors of symbolic play and the ways in which it is learned, if it is learned. Extrapolating from the fact that some children with severe emotional disturbances and children who have been raised in institutions, with extreme deprivation of basic interpersonal contacts, do not play, those who have observed nonplaying children in the preschool have been alarmed.[56]

The developmental-interaction approach has held that for the young child play represents the child's symbolic reconstruction of reality, a way of finding out how things go together and, through role playing, experimenting with the expression of feelings and types of interpersonal relationships.[57] Play of this kind requires that the child feel a basic safety and security in the world, and an openness of communication, or willingness to be open, with other children and adults. If children are not playing, and their not playing means that they are not engaging with the environment of materials and other people, a sense of safety and trust must be developed as an essential prerequisite of playfulness, symbolic exploration, and subsequent learning and integration of experience.

While symbolic play is considered fundamental to the development of representational and creative thought, it is important to consider the different forms which symbolic activities may take in different subcultures and to guard against middle-class stereotypes of how children should play.[58] Moreover, the problem is not solved merely by teaching the behavior: as noted earlier, the achievement of certain behaviors – be they manipulation of numbers, increased vocabulary, or more sophisticated block buildings – is meaningful only to the extent that the achievements signify the underlying processes.

The educational environment does not begin and end at the classroom door. The classroom is part of the school and the school itself is a social system, with physical, aesthetic, and interpersonal character. The school provides the context in which education occurs and, as such, is part of the system of influences affecting children. School rules and mores reveal assumptions about what human beings are like, how they can be influenced, what they value and disapprove of, what motives them, and what their relations to one another should be.

The nature of school environments and how they affect children is not clearly understood. Systematic assessments of the educational climate of the school have been devised by Halpin, whose method includes descriptive terms such as open vs. closed and autonomous vs. controlled schools.[59] Minuchin, Biber, Shapiro, and Zimiles, who characterized school ideology and practice as modern vs. traditional, analyzed four general themes: (1) concepts and practices relevant to education for competence, (2) quality and patterns of interaction among people, (3) the view of individuality, and (4) the relation of the school to its social and professional milieu.[60] Such attempts to characterize school environments are a necessary first step toward specifying the relevant dimensions of influence. The precise ways in which schools shape children remain unclear, but the power of their influence is not in question.

Furthermore, the environment in which education occurs, taken in the broadest sense, includes numerous sociological and ecological variables over which educational planners have little or no control. The differences between rural and urban life, between being black or white, middle class or poor, involve what Jessor and Richardson call distal variables, that is, relatively remote, non-psychological variables whose relationship to behavior is mediated by proximal variables.[61] We are concerned here with the child's proximal environment, that is, with "the immediate psychologically defined context of functional stimulation."[62]

We know little about the way in which distal variables are rendered into psychologically meaningful influences. Yet it is easy to see that demographic, ethnic, and economic factors affect the types of experiences the child is likely to have had before he enters school, and often determine what he encounters when he leaves school each day. Contrast, say, the streets of the inner city, with its dense population and conspicuous physical decay, with the empty, though equally poverty-stricken, rural areas of the South (or of Vermont or North Dakota), the suburban streets of Mamaroneck, and the Kansas small town life described by Murphy and by Barker and Wright.[63]

The ease and safety with which a child can move about, the range of people he may meet, the kind of know-how he acquires, the physical condition of the manmade environment, and the quality and visibility of the natural environment all have implications for his psychological development. They determine the images of objects and people that he forms before he comes to school, and against which he tests what he is told in school.

Yet implicit in the sequential and hierarchical arrangement of the educational system is the notion that the school controls the child's intellectual progress. This is assumed in spite of the fact that the child accumulates a repertoire of information, expectations, and ideas about people and events before he comes to school and continues to do so in his life outside school. Furthermore, it has been a generally accepted platitude that home and school, along with community and religion, share the task of teaching and socializing that child. While the current breakdown of this collaboration is a sign of its fragility, conflict between home and school is not a new phenomenon. The values of many groups in this country were ignored by the educational system. Although the image of the melting pot was accepted and a joint purpose was assumed, no one paid much attention to the exceptions and failures.

The idea of continuity and interchange between in-school and out-of-school experience is positively valued in our approach.[64] A central tenet of the developmental-interaction view is that school should offer the child experiences that are not divorced from "real life." Real life includes school and the world outside. The world outside must have meaning in school, and school must have meaning in the world outside. Thus educational planning and curriculum development must be connected to the diverse realities of children's out-of-school environments. School learning is assumed to be reinforced when it is seen by the child as connected with his life out of school.

Children of course make distinctions between home and school, and teachers should support those distinctions. Children are also exposed to ideas and values in school that may differ from those of their parents. There have always been value conflicts between schools and parents – especially when parents are not part of the mainstream American culture. Parental expertise is undermined by the fact that as their children get older they learn more facts, and ways of solving problems that are unfamiliar to their parents, or at variance with what their parents learned. While this has long been true for poor and minority group families, it has recently become part of the experience of the educated middle class. In an era of curriculum revision parental pride may be mixed with uneasiness when their twelve year old's knowledge of genetics is more up to date than their own, or their fourth grader studies a subject they learned in high school. But middle-class parents usually have the edge: they are often better educated than some of the teachers, and, more important, they are sure of themselves and their rights. For the poor and uneducated parent the school has often loomed as an intimidating institution.

There has been ample documentation that the child from the ghetto and impoverished rural areas begins school less developed than his middle-class counterpart in the kinds of competence that lead to success in school, and that this gap widens rather than narrows during the elementary years. The general consensus that something must be done has led, since the mid-60s, to a raft of intervention programs which have been developed for young children in thousands of communities.[65]

The characteristics of these programs are determined by the theoretical preferences of the sponsors, their analysis of the children's functioning, and conceptualization of the antecedent conditions presumed to be causal. Some programs are based on the diagnosis of a deficit, defined as primarily or entirely cognitive, and often focus on the cultivation of verbal or perceptual skills which are assumed to provide the foundation for more general conceptual abilities.[66] When the diagnosis points to a specific deficiency, the remedy is likely to be equivalently specific.[67] If, further, learning and development are viewed as progressing additively, the program is likely to involve making up for "lost" time, as is exemplified in Bereiter and Engelmann's statement that "… it is a simple logical necessity that these children *must progress at a faster than usual rate* if they are to catch up."[68] In a description of a rationale for working with disadvantaged children in the preschool, Biber, on the other hand, has stated two primary goals: to advance "the ability to use language functionally and to be able to systematize experience through mastery of conceptual-cognitive processes" and simultaneously to build "personal and interpersonal strength … a solid sense of self and internalized code of behavior." Perhaps most important, programs designed to meet these goals must follow a dual mandate: "The methods we choose by which to fulfill the first goal must support and never violate the second goal; the methods we use to fulfill the second goal should make the first potentially more realizable."[69]

One of the school's responsibilities is to interpret the educational program and its goals to parents. In order to do so, teachers and administrators should be able to communicate effectively with parents whose backgrounds are socioeconomically and ethnically different from as well as similar to their own. Their responsibility is to talk with parents about what they are trying to accomplish in school – about their values and goals and the details of the curriculum – not only about how well or how poorly a child is doing. Recent research and programs focused on parents and children who live in poverty have highlighted the ways in which personal, societal, and class variables interact with racial and ethnic membership. The image of the school in this context has shifted from one of supplementing or complementing the home to one of counteracting or compensating for presumed inadequacies in the home. At the same time, while the widely circulated notion of the culture of poverty has served to focus attention on and describe some of the concomitants of being poor, the concept has also blurred distinctions among the poor, and has supported the image of two social systems, one the core culture of the affluent middle class, the other the alienated culture of poverty.

It becomes more and more important to differentiate these two social systems and also to delineate areas of commonality in values and patterns of interaction. Social scientists, for the most part, have looked at the life of the poor through middle-class lenses. Baratz and Baratz make a strong case that the ethnocentric bias of social scientists has governed the rationale and nature of intervention programs, especially those for blacks.[70] An impressive literature supports the generalization that, within the middle and working classes, differences in family structure, ideology, methods of child rearing, as well as in personality characteristics of the parents, and the father's occupation, are associated with differences in children's attitudes, behavior patterns, and achievement. Comparable distinctions within the lower socioeconomic group are surely equally if not more influential.

In compensatory education programs such as Head Start and Follow Through, the school is not only responsible for explaining and interpreting its educational program and goals to parents, but also for involving them in a cooperative relation with the school staff. The goal is to provide maximal integration of the child's in-school and out-of-school life, so that each complements the other. Parents are encouraged to participate in school activities, to take courses to improve their occupational possibilities, to work as aides, to participate in decision-making and in local community action groups. Some of these activities have less to do with the parent as parent than with changing the parent's (usually the mother's) relation to aspects of society. They are intended to affect her as an adult and, therefore, as a role model for her children.

Hess, Shipman, Brophy, and Bear, in their study of urban black mothers and their four-year-old children, found that the mother's attitudes toward her child's school, toward the mother-teacher relationship, and what she told her child school would be like were potent predictors of the child's subsequent cognitive performance in school.[71] Mothers who expressed feelings of powerlessness in relation to institutional authority were likely to have children less able to cope effectively with schooling.

It is to these attitudes – the sense of personal effectiveness in relation to institutions – that school programs for parents and parent participation on school governing boards must be addressed. Educational programs must also accept the responsibility of mitigating the discontinuity which they create. To work only with the children must lead to increased conflict between the generations and distress for both children and parents. By opening its doors to parents and inviting them to participate in educational and social programs, the school can create the possibility of a partnership in educating the child. The school may influence fundamental life styles and patterns of interaction in the family; exposure to the values and mores of other cultural groups may influence curriculum content and administrative practice and alter the school's relation to its cultural milieu.

The explication and interpretation of educational programs and goals to parents is not always easy, especially when the program and goals are not immediately perceived by the parents as related to their aspirations. The idea of intervention represents planned discontinuity with the societal status quo. In order to succeed it must also have a manifest relation to the parents' goals for their children and some connection with the parents' previous experience and cultural style. Here the specific characteristics of the program and the parent population are crucial. It may sometimes be easier for parents to see the value of direct training procedures which produce immediate increases in the child's informational repertoire than to agree to the relevance of attitudes and emotional relationships as essential to the long range growth of competence.

Most psychologists and educators have only recently paid attention to problems associated with poverty and social stigma. That their work has not met with more success is due in part to the gaps in our knowledge about early development and the range of necessary or sufficient conditions for its optimal path at different periods. Furthermore, our knowledge in this field has not been integrated with available knowledge about the different subcultures in American society, the ways in which social values and structure operate within and across societal subsystems, and especially how they influence the socialization and development of children.[72] Unfortunately, even when we do know enough, for example about the relation between nutrition and intellectual impairment,[73] effective action does not necessarily follow. Many of the poor, caught now in the revolution of rising expectations, are tired of being researched and tired of programs designed to "improve" them.

Current research and theory are far from providing a clear-cut picture of a deprivation syndrome.[74] As professional people, committed both to social values and to social science, we must overhaul some of our conventional procedures and ways of thinking. In our working with poor children and families, we need to be aware of our own cultural biases. This is not a question merely of remembering that lower-class life style has its virtues too, but of being aware that psychology has never been as good at predicting strength and the ability to overcome adversity as it has in accounting for weakness and malfunction.

It is to be hoped that what may emerge from research on these problems is a sharpened theoretical understanding of the interaction of social forms with dynamic processes of development and a more effective roster of educational techniques. The developmental-interaction approach, like all theoretical structures, must be ready to accommodate its principles and practices to such new information and understanding.

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[3] Elizabeth C. Gilkeson and Garda W. Bowman. Bank Street Approach to Follow Through. New York: Bank Street College of Education, 1972. Mimeograph.

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[5] Evelyn Beyer. Let's Look at Montessori. *Journal of Nursery Education.* Vol. 18, No. 1. November, 1962, pp. 4-9.

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[8] Patricia Minuchin, Barbara Biber, Edna Shapiro, and H. Zimiles. *The Psychological Impact of School Experience.* New York: Basic Books, 1969.

[9] Lawrence Kohlberg. Early Education: A Cognitive-Developmental View. *Child Development,* Vol. 39, No. 4, December 1968, pp. 1013-1062.

[10] *Ibid.,* p. 1014.

[11] A.S. Neill. *Summerhill.* New York: Hart Publishing, 1960.

[12] G. Dennison. *The Lives of Children.* New York: Random House, 1969; C. Gattegno. *What We Owe Children—The Subordination of Teaching to Learning.* New York: Outerbridge and Dienstfrey, 1970; J. Holt. *How Children Fail.* New York: G.P. Putnam's Sons, 1964; H.R. Kohl. *The Open Classroom.* New York: New York Review, 1969.

[13] Kohlberg, op cit., p. 1015.

[14] C. Bereiter and S. *Engelmann. Teaching Disadvantaged Children in the Preschool.* Englewood Cliffs, N.J.: Prentice-Hall, 1966; D. Bushell. *The Behavior Analysis Classroom.* Lawrence, Kansas: Follow Through Project, 1970.

[15] Kohlberg, op. cit.

[16] J.G. Wallace. *Concept Growth and the Education of the Child.* Slough, England: National Foundation for Educational Research in England and Wales, 1965; I.E. Sigel, The Piagetian System and the World of Education. In D. Elkind, ed., *Studies in Cognitive Development.* New York: Oxford University Press, 1969, pp. 465-489; H. Furth, Piaget for Teachers. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

[17] See, *Children and Their Primary Schools* (The Plowden Report), a report of the Central Advisory Council for Education, Vol. I. London, England: H.M.S.O., 1967; and J. Featherstone. *Schools Where Children Learn.* New York: Liveright, 1971.

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[19] Jerome S. Bruner. *The Process of Education.* Cambridge, Mass.: Harvard University Press, 1960; Jerome S. Bruner. *Toward a Theory of Instruction.* Cambridge, Mass.: Harvard University Press, 1966.

[20] Kohlberg, op. cit.

[21] *Ibid.,* p. 1056.

[22] See, P.H. Wolff, The Developmental Psychologies of Jean Piaget and Psychoanalysis, *Psychological Issues,* Vol. 2, No. 1, Monograph 5, 1960; and Barbara Biber and Margery Franklin, The Relevance of Developmental and Psychodynamic Concepts to the Education of the Preschool Child, *Journal of the American Academy of Child Psychiatry,* Vol. 6, No. 1, 1967, pp. 5-24.

[23] These goals are stated to apply to a fairly wide age span—the preschool through the elementary years. For substages within that span, the goals would not be different, but the focus and priorities would be. For an amplification of one of the goals (cognitive development) with illustrative classroom practices for the preschool period, see Barbara Biber, Edna Shapiro, and D. Wickens. *Promoting Cognitive Growth from a Developmental-Interaction Point of View.* Washington, D.C.: National Association for the Education of Young Children, 1971.

[24] Discussion of aspects of the developmental and educational concepts intrinsic to the developmental-interaction approach has appeared in Barbara Biber, Schooling as an Influence in Developing Health Personality, in Ruth Kotinsky and Helen Witmer, eds., *Community Programs for Mental Health.* Cambridge, Mass.: Harvard University Press, 1955, pp. 158-221; Barbara Biber, Integration of Mental Health Principles in the School Setting, in G. Caplan, ed., *Prevention of Mental Disorders in Children.* New York: Basic Books, 1961, pp. 323-352; Barbara Biber, Preschool Education, in R. Ulich, ed., *Education and the Idea of Mankind.* New York: Harcourt, Brace and World, 1964, pp. 71-96; Barbara Biber, A Learning-Teaching Paradigm integrating Intellectual and Affective Processes, in E.M. Bower and W.G. Hollister, eds., *Behavioral Science Frontiers in Education.* New York: John Wiley, 1967, pp. 111-155; Biber and Franklin, op. cit.; Barbara Biber and Patricia Minuchin, The Role of the School in the Socialization of Competence, in B.C. Rosen, H.J. Crockett, and C.Z. Nunn, eds., *Achievement in American Society.* Cambridge, Mass.: Schenkman Publishing, 1969, pp. 260-282; and R. Cartwright and Barbara Biber, The Teacher's Role in a Comprehensive Program for Mental Health, in Ojemann, op. cit.

[25] Biber and Franklin, *Ibid.,* p. 11.

[26] See Kohlberg, *op. cit.,* pp. 1044-1051.

[27] W. Dennis and P. Najarian, Infant Development Under Environmental Handicap. *Psychological Monographs,* Vol. 71, No. 7, 1957.

[28] H.B. Robinson and Nancy M. Robinson, The Problem of Timing in Pre-School Education, in R.D. Hess and Roberta M. Bear, eds., *Early Education: Current Theory, Research, and Practice.* Chicago, Ill.: Aldine Publishing, 1968. pp. 37-51.

[29] See Kohlberg, *op cit.;* Cynthia P. Deutsch and M. Deutsch, Brief Reflections on the Theory of Early Childhood Enrichment programs, in Hess and Bear, *op. cit.,* pp. 83-90.

[30] W. Kessen, "Stage" and "Structure" in the Study of Children. In W. Kessen and Christine Kuhlman, eds., *Thought in the Young Child.* Monograph of the Society for Research in Child Development, Vol. 27, No. 2, Serial No. 83, 1962, pp. 65-82.

[31] Biber and Franklin, *op. cit.,* p. 17.

[32] H. Werner, The Conception of Development from a Comparative and Organismic Point of View, in D. Harris, ed., *The Concept of Development.* Minneapolis, Minn.: University of Minnesota Press, 1957, pp. 125-148.

[33] Biber and Franklin, *op. cit.,* pp. 15-16.

[34] A.L. Stinchcombe, Environment: The Cumulation of Events, *Harvard Educational Review,* Vol. 39, No. 3, 1969, pp. 511-522.

[35] Biber and Franklin, *op. cit.,* p. 9.

[36] Bruner, *Toward a Theory of Instruction, op. cit.*

[37] R.W. White, Motivation Reconsidered: The Concept of Competence, *Psychological Review,* Vol. 66, No. 5, September, 1959, pp. 297-333; Jean Piaget, *The Origins of Intelligence in Children.* New York: International Universities Press, 1952.

[38] G.H. Mead. *Mind, Self and Society: From the Standpoint of a Social Behaviorist,* C.W. Morris, ed. Chicago, Ill.: University of Chicago Press, 1934; Biber and Franklin, op. cit., pp. 13-14.

[39] Biber and Franklin, *Ibid.,* p. 19.

[40] H. Werner, Process and Achievement: A Basic Problem of Education and Developmental Psychology, *Harvard Educational Review,* Vol. 7, No. 3, May, 1937, pp. 353-368.

[41] J. Glick. Some Problems in the Evaluation of Preschool Intervention Programs, in Hess and Bear, *op. cit.,* pp. 215-221.

[42] For background see those references cited in footnote 24.

[43] The convention of referring to the teacher as she is used although it is hoped that the present trend for more males to teach children of younger ages will soon make this convention obsolete. Also, the teacher is referred to in the singular although it is assumed that she will have auxiliary staff helpers (teaching assistants, aides, or student teachers) and that some subjects may be taught by specialists. It is the teacher's task to delegate responsibilities and create a cooperative working relationship for carrying out the teaching role indicated.

[44] Biber, Shapiro, and Wickens, *op. cit.*

[45] R. Rosenthal and Lenore Jacobson. *Pygmalion in the Classroom.* New York: Holt, Rinehart and Winston, 1968; Eleanor, Leacock, *Teaching and Learning in City Schools.* New York: Basic Books, 1969.

[46] Biber, Integration of Mental Health Principles in the School Setting, *op. cit.*

[47] *Ibid.,* pp. 338-339.

[48] Some schools, for example the City and Country School in New York City, have a job program for children of eight and older. Each job—delivering the school mail, operating a store for school supplies, printing school notices—serves a real need of the school community. In a number of schools older children are responsible for the care, in specific circumstances, of younger children, or may help younger children with their reading or other learning. See Harriet K. Cuffaro, The Mutual Growth of Twelve and Four Year Olds. M.S. thesis, Bank Street College of Education, New York, 1969.

[49] Brian Sutton-Smith. The Playful Modes of Knowing, in *Play: The Child Strives Toward Self-Realization.* Washington, D.C.: National Association for the Education of Young Children, 1971.

[50] See, for example, Harriet M. Johnson, *Children in the Nursery School.* New York: John Day, 1928; Susan Isaacs. *Social Development in Young Children.* London: Routledge and Kegan Paul, 1933; Ruth Griffiths, *Imagination in Early Childhood.* London: Routledge and Kegan Paul, 1935; Barbara Biber. Play as a Growth Process, *Vassar Alumnae Magazine,* Vol. 37, No. 2, 1951; Lois B. Murphy, *Personality in Young Children: Methods for the Study of Personality in Young Children,* Vol. 1. New York: Basic Books, 1956; E. Erikson, Identity and the Life Cycle, *Psychological Issues,* Vol. 1, No. 1, 1959; and Evelyn B. Omwake, The Child's Estate, in A.J. Solnit and Sally A. Provence, eds., *Modern Perspectives in Child Development.* New York: International Universities Press, 1963, pp. 577-594.

[51] Jean Piaget. *Play, Dreams and Imitation in Childhood*. New York: W.W. Norton, 1951.

[52] See, Millie Almy. Spontaneous Play: An Avenue for Intellectual Development, *Bulletin of Institute of Child Study,* Vol. 28, No. 2, 1966. Reprinted in Frost, *op. cit.,* pp. 354-369; Susan Millar. *The Psychology of Play.* Baltimore, Md.: Penguin Books, 1968; Virginia Stern. Cognitive Aspects of Symbolic Play, paper presented at meetings of the National Association for the Education of Young Children, Minneapolis, Minn., November, 1971; and Joan Costello, Children's Approaches to Learning Through Observation of Their Play, paper given at Conference on Play, Sarah Lawrence College, Bronxville, New York, April, 1972.

[53] R.M. Jones. *Fantasy and Feeling in Education.* New York: Harper and Row, 1968.

[54] See, Sara Smilansky. *The Effects of Socio-dramatic Play on Disadvantaged Children.* New York: John Wiley, 1968; and Sara Smilansky, Can Adults Facilitate Play in Children?: Theoretical and Practical Considerations. In *Play: The Child Strives Toward Self-Realization, op. cit.*

[55] *Ibid.;* Ilse Mattick, Adaptation of Nursery School Techniques to Deprived Children, *Journal of the American Academy of Child Psychiatry,* Vol. 4, No. 4, 1965, pp. 670-700. These findings have also been corroborated at the Bank Street Early Childhood Center.

[56] Sally A. Provence and Rose C. Lipton. *Infants in Institutions.* New York: International Universities Press, 1963.

[57] Biber. Play as a Growth Process, *op. cit.*

[58] Margery Franklin. A Study of Non-Verbal Representation in Middle-Class and Lower-Class Preschool Children. New York: Bank Street College of Education, 1970. Mimeograph.

[59] A.W. Halpin. *Theory and Research in Administration.* New York: Macmillan, 1966.

[60] Minuchin, Biber, Shapiro, and Zimiles, *op. cit.*

[61] R. Jessor and S. Richardson. Psychosocial Deprivation and Personality Development, in *Perspectives on Human Deprivation.* Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1968.

[62] *Ibid.,* p. 4.

[63] Lois B. Murphy. *The Widening World of Childhood: Paths Toward Mastery.* New York: Basic Books, 1962; R.G. Barker and H.F. Wright, *Midwest and Its Children.* Evanston, Ill.: Row, Peterson, 1955.

[64] There are, of course, discontinuities within the educational system, notably between nursery school, kindergarten, and first grade. Some, for example, E.R. La Crosse, Jr., P.C. Lee, Frances Litman, D.M. Ogilvie, Susan S. Stodolsky, and B.L. White, The First Six Years of Life: A Report on Current Research and Educational Practice, *Genetic Psychological Monograph,* Vol. 82, 1970, pp. 161-266, appear to suggest that greater continuity should be achieved by making earlier schooling more like later schooling. This may be a response to the acknowledged rigidity of educational institutions. It seems more useful to attempt to match the characteristics of school experience to children's developmental status and to maximize continuity in school by devising interrelated sequential curricula.

[65] In limiting this discussion to educational questions and programs we do not intend to minimize the importance of other programs nor to imply that educational programs alone can decrease the effects of poverty, discrimination and educational failure. One need only examine H.G. Birch and Joan D. Gussow. *Disadvantaged Children: Health, Nutrition and School Failure.* New York: Harcourt, Brace and World, 1970, a cogent demonstration of the relations between poverty, race, and health and the implications for intellectual functioning, to see that educational programs cannot by themselves remedy the consequences of poverty.

[66] For example, Bereiter and Engelmann, *op. cit.;* and M. Deutsch and Associates. *The Disadvantaged Child: Studies of the Social Environment and the Learning Process.* New York: Basic Books, 1967.

[67] H. Zimiles. An Analysis of Methodological Barriers to Cognitive Assessment of Preschool Children, paper presented at meetings of International Society for Study of Behavioral Development, Nijmegen, Netherlands, 1971.

[68] Bereiter and Engelmann, *op. cit.,* p. 7.

[69] Barbara Biber. Goals and Methods in a Preschool Program for Disadvantaged *Children,* Children, January-February, 1970, p. 16. See also, Ilse Mattick, The Teacher's Role in Helping Young Children Develop Language Competence, *Young Children,* Vol. 72, No. 3, 1972, pp. 133-142.

[70] S.S. Baratz and Joan C. Baratz. Early Childhood Intervention: The Social Science Base of Institutional Racism, *Harvard Educational Review,* Vol. 40, No. 1, 1970, pp. 29-50.

[71] R.D. Hess, Virginia C. Shipman, J.E. Brophy, and Roberta M. Bear. The Cognitive Environments of Urban Preschool Children, Chicago, Ill.: University of Chicago Graduate School of Education, 1968. Mimeograph.

[72] A. Inkeles. Society, Social Structure, and Child Socialization, in J. Clausen, ed., *Socialization and Society.* Boston, Mass.: Little, Brown, 1968, pp. 73-129.

[73] See, Birch and Gussow, *op. cit.*

[74] *Perspectives on Human Deprivation: Biological, Psychological, and Social.* Washington, D.C.: U.S. Department of Health, Education, and Welfare, Public Health Service, National Institute of Child Health and Human Development, 1968.