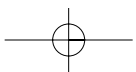
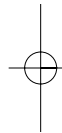
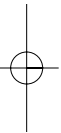


# **PART I**

# **Evidence-Based Practices**



## 1

# School Readiness

## *Definitions, Best Practices, Assessments, and Cost*

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**S**tarting school ready to learn gives children tremendous advantages that improve their chances of enjoying success in the classroom and later in life. Entering school behind, however, places many children at risk of staying behind, doing poorly, eventually dropping out, and enduring other troublesome outcomes. Research indicates that half of the achievement gap between poor and minority students, which the federal No Child Left Behind legislation has focused upon closing, is evident at the time of children's entry into school (Lee & Burkam, 2002). This gap is pronounced well before children start school, already evident in the infant and toddler years (Rothstein, 2004).

### **THE IMPORTANCE OF EARLY LEARNING**

Recent brain and child development research demonstrates the importance of early learning for needed primary school skills as well as lifespan development. All infants and young children need a nurturing environment for physical, social, emotional, and cognitive development, particularly to develop trusting relationships with others—the foundation for a successful future. A nurturing environment, a common theme in the school readiness research, means an environment in which children receive constant and consistent parental caregiving; adequate food, nutrition, and health care; help in maximizing physical growth, preliteracy cognition, and socialization skills; and appropriate continuous supervision to safely explore their world. If these fundamental needs are not

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met, children may be at risk for not being ready for school and healthy life-long learning (Bruner, Floyd, & Copeman, 2003).

The future well-being of today's young children is not everything that is at stake. With a large number of today's working men and women set to retire over the next 20 years, the generation that has yet to enter school will account for a large share of the workforce and become a significant factor in determining the future economic strength and vitality of the United States. Business and community leaders are trying to cope with an unqualified workforce. The main complaint from this group is that too many job applicants simply do not have the interpersonal skills necessary to work in the business environment. More and more of these leaders are speaking out on the need to invest in early childhood services to improve the school readiness of young children (Committee for Economic Development, 2002; Rolnick & Gruenwald, 2003).

### DEFINITIONS OF SCHOOL READINESS

There is broad consensus among scholars that school readiness is multidimensional—that health and physical development, social and emotional development, language and literacy, approaches to learning, and cognitive development all are independent and yet interrelated aspects of “what children know and can do” and that there is no single metric to determine a child's school readiness (National Education Goals Panel, 1991; Shonkoff & Phillips, 2000). At the same time, there is much debate over precisely what skills and supports should be part of public strategies to help children become ready for school (e.g., learning letters and numbers, learning how to take turns and sit still, eating healthy meals). Since President George W. Bush signed the No Child Left Behind Act (NCLB) into law in January 2002, the national focus on school readiness has been on helping children develop early literacy skills. Clearly, the focus of many public programs and services, and of the measurement and accountability systems for them, has been on the cognitive and literacy development dimensions.

Although these cognitive and early literacy skills are important components of readiness for school, other dimensions are equally important. Two prominent national groups have worked to define specifically the skills and supports necessary for school readiness: The National Education Goals Panel (NEGP) and the Head Start Child Outcomes Framework. Their definitions are discussed next.

#### The National Education Goals Panel

In 1991, the National Education Goals Panel (NEGP) developed a broad definition of school readiness based on child development research

that includes a combination of three factors: (1) the readiness of children (“what children know and can do”), (2) the readiness of schools, and (3) the readiness of family and community supports (National Education Goals Panel, 1991).

### *Readiness of Children*

The NEGP established its definition of readiness to include physical, social, and emotional well-being in addition to cognitive components, and it identified five dimensions of early development considered critical to preparing children to learn (Kagan, Moore, & Bredekamp, 1995):

*Physical well-being and motor development.* This category includes health; growth rate; physical abilities, such as fine motor skills; and conditions before and after birth, such as low birth weight and toxic environmental exposure.

*Social and emotional development.* Social development (the ability to interact with others) includes being able to take turns and enter play groups. Emotional development includes children’s ability to understand the feelings of other people and express their own feelings.

*Approaches to learning.* Approaches to learning refer to a child’s inclination and use of skills and knowledge and includes curiosity, enthusiasm, temperament, and cultural values.

*Language development.* Language development includes verbal language (listening, speaking, and vocabulary) and early literacy, such as being able to assign sounds to letter combinations and understand basic story structure.

*Cognition and general knowledge.* This category ranges from knowing about shapes and numbers to being able to identify similarities and differences in objects, events, and people.

### *Readiness of Schools*

Schools themselves play a key role in the readiness of children to learn. Kindergarten teachers report that between 10% to more than 30% of their children do not have the skills necessary to be successful in school (Shore, 1998). Just as children need the opportunity to develop these skills, schools need to be ready to accept children with diverse backgrounds, abilities, and needs. The NEGP identified 10 key research-based

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practices of ready schools. Ready schools are prepared to receive children from diverse backgrounds and to support the learning and development of all young children. The following 10 practices are outlined in an NEGP publication (Shore, 1998).

1. *Ready schools smooth the transition between home and school.* For many children, the transition to school is stressful. Schools can work through this difficult time by connecting with parents and the community to understand each child and develop an appropriate school program. Despite the need for smooth transitions, few schools actively engage in adequate transition practices (Kraft-Sayre & Pianta, 2000).
2. *Ready schools strive for continuity between early care and education programs and elementary schools.* By reaching out and connecting to community early childhood programs, Head Start, families, etc., elementary schools can help to ease this transition for children. Joint planning and inservice training of staff between early childhood programs and schools can help promote a sense of continuity for education and learning philosophies for young children.
3. *Ready schools help children learn and make sense of their complex and exciting world.* Ready schools are able to help children use their new knowledge to make sense of their world and problem solve. Schools do this by using diverse curricula and instructional approaches, offering high quality instruction, using appropriate levels (pace and content) of instruction, creating incentives for learning, using time effectively, and learning in the context of relationships.
4. *Ready schools are committed to the success of every child.* Ready schools acknowledge children's individual needs; present an environment that is conducive to learning and exploration; exhibit an ongoing awareness of the impact of poverty and race; have the capacity to meet special needs in regular classrooms whenever possible; and ensure language-minority children age-appropriate, culturally sensitive, and challenging curricula and instruction.
5. *Ready schools are committed to the success of every teacher and every adult who interacts with children during the school day.* Ready schools hire knowledgeable staff and consistently offer opportunities for enhanced professional development, encourage mentoring and collaboration, support teachers in their lesson planning with time

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and materials, foster teamwork, and encourage participation in performance-based assessments and national certification. In addition, ready schools encourage and host opportunities for school staff to interact and engage in professional development opportunities with staff from early childhood education programs as well as higher education institutions in the community.

6. *Ready schools introduce or expand approaches that have been shown to raise achievement.* Ready schools are aware of current research regarding educational strategies and use this information to provide prompt and supportive intervention; parent involvement strategies; flexible approaches to school and classroom organization, staffing, and grouping (class size, classroom staffing, and mixed-age grouping); and research and dissemination.
7. *Ready schools are learning organizations that alter practices and programs if they do not benefit children.* Ready schools avoid or eliminate the following common practices that do not show lasting benefits: retention and extra-year programs, “redshirting” (electing to delay kindergarten entry), denying school entry, and “pushing down” or “hothousing” (using the curriculum of an older grade in a younger grade classroom).
8. *Ready schools serve children in communities.* Ready schools form symbiotic relationships and collaborations with services and supports in the communities in which their children live (health, educational, social, etc.). These relationships allow a seamless system for referrals and out-of-school educational opportunities (e.g., museums, libraries), plus a sense of civic and community responsibility for all parties.
9. *Ready schools take responsibility for results.* Ready schools accept responsibility for individual children’s learning and accomplishments by providing each child with the supports he or she needs to be successful in school. Ready schools also inform parents and communities of their mission and goals, how well they are being met, and how they are assessing them.
10. *Ready schools have strong leadership.* Leaders of ready schools have a vision that is based on the needs of the children and families in the community and on sound research, and they aspire to lead children to high standards of learning. Leaders of ready schools also are committed to guiding faculty and parents in obtaining the vision and communicating the ups and downs of success. Ready

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schools require skilled teachers and maintenance of strong expectations and educational standards for all students (Blank, 2003; Rothstein, 2004).

### *Family and Community Supports*

The NEGP underscored the importance of family and community supports in six key aspects of school readiness (National Education Goals Panel, 1997):

1. Access to high quality preschool increases children's chances of succeeding in school and later in life.
2. Decades of research have shown that high quality early childhood programming benefits children and communities.
3. Support and training for parents enhances their effectiveness as their children's first teacher.
4. Community supports are essential to family well-being.
5. Good health and nutrition allow children to enter school mentally alert and physically sound.
6. When children's physical needs are met, they are better able to explore and learn.

### **Head Start Child Outcomes Framework**

The Head Start Child Outcomes Framework was released in 2000 to guide Head Start programs in planning assessments of their programs and children, rather than to prescribe a checklist to gauge children's progress. The Framework contains components similar to the NEGP definition of readiness. It encompasses eight general Domains, 27 Domain Elements, and Indicators of children's development and behaviors. The Domains, Elements, and Indicators comprise a framework showing what is necessary for children to be ready for school. Information from these Domains, Elements, and Indicators reveals children's progress in the form of teacher and home visitor observations, analysis of samples of children's work and performance, parent reports, or direct assessment of preschool-age children (U.S. Department of Health and Human Services Administration for Children and Families, 2003). The eight Head Start Domains and their Elements are listed in Box 1.1 and paired to the five NEGP dimensions of readiness in children.



### **Box 1.1 The Five NEGP Dimensions and the Eight Head Start Domains and Elements**

<b>NEGP Dimensions</b>	<b>Head Start Domains Head Start Domain Elements</b>
Physical Well-Being and Motor Development	Physical Health and Development Gross Motor Skills Fine Motor Skills Health Status and Practices
Social and Emotional Development	Social and Emotional Development Self-Concept Self-Control Cooperation Social Relationship Knowledge of Families and Communities
Approaches Toward Learning	Approaches to Learning Initiative and Curiosity Engagement and Persistence Reasoning and Problem Solving
Language Development	Literacy Phonological Awareness* Book Knowledge and Appreciation* Print Awareness and Concepts* Early Writing Alphabet Knowledge  Language Development Listening and Understanding Speaking and Communicating
Cognition and General Knowledge	Mathematics Numbers and Operations* Geometry and Spatial Sense Patterns and Measurement  Science Scientific Skills and Methods Scientific Knowledge  Creative Arts Music Art Movement (also fits NEGP Motor Goal) Dramatic Play

\*NOTE: Indicates those Head Start Child Outcomes Framework Domain Elements that are legislatively mandated.

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### THE INTERSECTION OF READINESS FACTORS

Child Trends' analysis of the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K; Wertheimer, Croan, Moore, & Hair, 2003) showed that in 1998–1999, 56% of kindergarteners were lagging behind in health, social and emotional development, or cognition, and 37% of those lagging behind in at least one area (21% of all children) did so in more than one area. While the dimensions of school readiness are conceptually distinct, children often are behind on more than one dimension and, when behind on more than one dimension, face substantially more challenges in catching up with their peers.

Further, research and assessments have demonstrated that differences in children's socioeconomic background, experience of parenting behaviors, brain development, and health contribute to racial and ethnic disparities in being ready for school. Best practices show that both parenting and preschool programs can benefit families and children in preparation for school (Haskins & Rouse, 2005).

### RESEARCH INFORMING SCHOOL READINESS FACTORS

Age is the criterion most often used to determine eligibility for kindergarten in many states. In some states, local districts make decisions about how children should be assessed for readiness and kindergarten entry and how the data should be used (see below for information on readiness assessment; Saluja, Scott-Little, & Clifford, 2000). Some states have agreed upon and adopted a statewide definition of school readiness and begun to estab-

As of 2003, twenty seven states had standards for preschool-age children covering at least one developmental domain or content area, and only four states had standards pertaining to infant and toddler-age children as well as preschoolers (Scott-Little, Kagan, & Frelow, 2003).

lish statewide measures across the five dimensions of school readiness (e.g., Maryland, Minnesota, Vermont, and Missouri). Most of these have adopted some form of work sampling to measure the five dimensions (Bruner & Copeman, 2003; Maryland State Department of Education, 2002).

Many programs and methods to improve school readiness are multidimensional, but various initiatives sway more toward one dimension of readiness or development than another. For example, most of the states in the survey that developed early learning standards had a focus on language and literacy development. Social-emotional development was one of the areas of least focus (Scott-Little, Kagan, & Frelow, 2003).

The following sections represent examples of research perspectives on programs dedicated to improving early childhood outcomes in the indicated areas.

### Health Development

The health of children during their early years can influence school readiness and school success. Good health and nutrition begins prenatally with parenting education and maternal health supports. Lack of prenatal care, low birth weight, inadequate nutrition, and lack of proper immunizations can affect a child's cognitive and behavioral development and thus readiness for and performance in school (Child Trends, 2000; Grantham-McGregor, 1995; Gross, Brooks-Gunn, Spiker, 1992; Korenman, Miller, & Sjaastad, 1995; Liaw & Brooks-Gunn, 1993). Further, lack of dental care can affect children's nutritional intake and physical growth (e.g., pain from tooth decay discourages eating) as well as their ability to concentrate and learn (Platt & Cabezas, 2000).

Several programs help to combat some of the health risk associated with school readiness.

- Federal Special Supplement Nutrition Program for Women, Infants, and Children (WIC): provides nutrition to pregnant women
- Food Stamp program: provides nutrition to families
- Head Start program: provides children with dental screenings, preventive services, and offers parenting education
- Medicaid and State Child Health Insurance Programs (SCHIP): include an Early, Periodic Screening, Diagnosis, and Treatment (EPSDT) provision that can identify and address health needs. Now, more than one-quarter of the nation's children are enrolled in these programs.

Cognitive and other gains were seen among low birth weight babies in the Infant Health and Development Study, a randomized trial of an intervention that offered pediatric monitoring, home visits, access to a child development center, and other supports. At age 36 months, children had gains in cognitive, visual-motor, spatial skill, and language development (McCormick, McCarton, Tonascia, & Brooks-Gunn, 1993).

### *Vision*

Nationally, it is estimated that 50% or more of minority and low-income children have vision problems that interfere with their ability to do academic work; this is double the rate among other children (Gould & Gould, 2003;

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Orfield, Basa, & Yun, 2001). These visual deficits include difficulties with tracking, caused by insufficient activities that train the eye to develop hand-eye coordination, depth perception, and eye movement across a printed page—key elements for learning to read (Rothstein, 2004). Some simple activities, such as vision screening and corrective actions, have produced substantial gains in reading readiness (Rothstein, 2004).

### *Environmental Toxins*

Exposure to environmental toxins, such as lead, also can inhibit development and limit children's school readiness. Lead exposure is higher for many children living in poverty. Eight percent of poor and minority children have highly problematic levels of lead in their blood (U.S. Department of Health and Human Services, 1999). Even low levels of lead exposure have been shown to cause cognitive deficits (e.g., IQ, reading, learning abilities), shortened attention spans, hyperactivity, and stunted physical growth (Child Trends, 2000). Prevention through parent and community education and proper lead abatement is the only treatment for lead exposure. Rhode Island recognized its high level of lead exposure among children and took a variety of corrective actions that dramatically reduced that exposure (Rhode Island Kids Count, 2003).

The Individuals With Disabilities Education Act, through its Part C Infant and Toddlers Program, provides early intervention services to address developmental delays. While these programs represent "entitlements to such services," state programs often are not well developed or comprehensive, and many eligible children do not receive early screening and follow-up services to address their health concerns.

### **Emotional Development**

Children who are emotionally well adjusted have a much greater chance of early school success. On the other hand, children who struggle to pay attention, follow directions, get along with others, and control their anger do less well in school (McLelland, Morrison, & Holmes, 2000). However, emotional problems that threaten outcomes can be identified and their influence diminished through early treatment involving focused parenting education and training as well as through preventive interventions in preschool settings (Child Trends, 2000).

Studies using randomized experimental designs suggest that interventions addressing children's emotional problems both at home and school are effective in reducing disruptive behavior by improving social and emotional skills and reading readiness (Raver, 2002). The Kauffman

Foundation produced a major report on the social and emotional development of young children that identifies effective and promising practices and highlights the interrelationship between social and emotional development and language, literacy, and cognitive development (Kauffman Early Education Exchange, 2002).

### Family and Home Environments

Strengthening families is another approach to improving school readiness. A large body of research underscores the importance of the family and home environment in early development. Economic status, particularly poverty, is associated with negative child outcomes. Poor children are more likely to have health problems and lower scores on measures of cognitive development than more affluent children (Brooks-Gunn, Britto, & Brady, 1999; Stipek & Ryan, 1997). Approaches to intervention include raising family income through jobs, income subsidies, and other means and providing quality child care and other services.

Studies suggest children do better in school when raised by both parents in a home in which conflict is minimal. However, in single-parent families, financial support from the absent parent, usually the father, has been associated with children's school success (Barber, Axinn, & Thornton, 1999; Huston et al., 2001; Moore et al., 1997; Morrison & Coiro, 1999).

Addressing any psychological problems of parents may benefit young children. Studies suggest children are at greater risk of emotional and behavior problems if their mothers are depressed or have other mental health problems (Child Trends, 2000).

Parents, particularly those who themselves lack strong educational backgrounds, need support and training to be able to help their children become ready for school. A good parent-child relationship shows children an important model of social relationships with others.

The earliest years of life (from birth to two) are exceedingly important to children's lifelong development, particularly in setting the social and emotional foundation and for early language acquisition; it is at these years that parental nurturing and support are critical to child growth and development (Kauffman Early Education Exchange, 2002; Shonkoff & Phillips, 2000). Further, increasing the supports

The Parents as Teachers (PAT) program provides home visitors who help parents bring about the social-emotional development of their children (Wagner & Clayton, 1999), and many parenting education programs also help connect parents to social and emotional supports for themselves.

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available for parents (e.g., mental health, physical health, occupational training, etc.) allows the family unit to function more efficiently, and thus increases the chances of positive child outcomes and school readiness.

### Child Care and Early Education

Research shows that all children, and particularly low-income children, can benefit from high quality programming (Kagan & Cohen, 1997). Children whose families have lower levels of education and incomes are less likely to attend a high quality program (National Education Goals Panel, 1997), primarily because they are not available, not affordable, or not convenient for the family. Access to quality child care and preschool has emerged as a critical factor in the readiness of children to enter school, learn, and succeed. Quality programs offer children appropriate enrichment, small class sizes, and ample attention from well-trained, caring teachers and staff. Research shows that certain components of quality child care programs are crucial. (See Box 1.2.)

The research demonstrates that only high quality child care programs are able to produce lasting effects on children, and those effects are greatest for children in low-income families. In addition, low quality care can be detrimental to all children regardless of family income. Both the

The Carolina Abecedarian Project, a randomized experimental trial, reported significant gains among children given high quality child care and education from age three months to kindergarten. At 18 months, they had higher scores on IQ tests than nonprogram children, and, from elementary school to early adulthood, they had higher reading and math scores (Frank Porter Graham Child Development Center, 2001).

Cost and Quality Outcomes Study and the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care show the important influence of quality care and education on children's overall development. Sadly, only a minority of child care settings in the United States now meets the criteria of good to excellent quality. Studies have shown that one key measure of quality is the training and credentials of the child care workforce (Ackerman, 2003).

As efforts to improve quality of child care proceed, issues of diversity and cultural competence need to be recognized.

Young children represent this country's most diverse age group in terms of race, ethnicity, and language. At the same time, the current credentialed early childhood workforce is not sufficiently diverse to meet the needs of the children it serves. Developing a culturally competent workforce requires investing in professional development that attracts this workforce.



## Box 1.2 Quality Characteristics of Early Care and Education Services

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**Well-educated staff specifically trained** in the child development area and related fields.

**Consistency of staff** over time, often promoted by adequate salaries and benefits, reasonable workloads, and pleasant and supportive working conditions.

**Low child-staff ratios and small group sizes** are necessary for staff to interact effectively with individual children, develop relationships, and provide the “teachable moment” that defines developmentally appropriate practices.

**Comprehensive educational and social services available or by referral** that are directed specifically at each individual (e.g., parent, child) and domains of desired improvement (e.g., child cognitive, social-emotional, parenting skills, drug and alcohol problems).

**Sufficient extent** (e.g., hours per day, weeks per year, years in program) **and program intensity** (e.g., time on task, direct instruction on learning tasks, etc.) are necessary to produce benefits.

**Supportive and regular supervision of staff** by knowledgeable administrators. The benefits of training staff are often achieved only if there is supportive supervision.

Plans for developing a rapport with families based on mutual respect and support, for encouraging **the involvement of parents** (both custodial and non-custodial fathers and mothers) in the program, and for ensuring that staff and curriculum are culturally competent.

**Systematic program monitoring and evaluation** to continuously improve programs and benchmark progress.

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In addition, a great deal of care provided to children is not in licensed or registered, formal care settings, but through family, friend, and neighbor care. There is promising work underway to support these caregivers and increase their capacity to enrich the development of the children under their care (Stahl, Sazer O'Donnell, Sprague, & Lopez, 2003). Up to half of all care provided to children while their parents work is provided in such nonregistered or licensed settings (Tout, Zaslow, Romano Papillo, & Vandivere, 2001).

There is a marked difference between many early care and education classrooms and kindergarten classrooms. With the advent of NCLB, focus in the classroom is even more pointed toward academic goals. For many children, these changes can be so intense that benefits gained from quality early childhood programming begin to fade in this new environment

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when the transition is harsh. States increasingly are working to align early childhood standards with early elementary school standards (Scott-Little, Kagan, & Frelow, 2003). In fact, the National School Readiness Indicators Initiative currently works with 17 states that developed sets of school readiness indicators for children from birth through age eight for the purposes of tracking progress in meeting key goals for children and to inform public policy (Rhode Island Kids Count, 2005).

### Community

In general, the effects of neighborhoods are most often associated with the socioeconomic status (SES) of their residents. Studies consistently report that when children live among high-SES neighbors, they tend to be better prepared when they enter school and more likely to succeed, and this is over and above what would be expected on the basis of their family SES alone.

In the Infant Health and Development Program (IHDP), no neighborhood effects were seen until children turned three years old. Then, researchers noted, living in a high-SES neighborhood tended to have a positive effect on children's IQ scores (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993). Relocating families out of poor neighborhoods is associated with children doing better in school. In Chicago's Gautreaux Project, a study of quasi-experimental design, children who were moved from public housing to the more affluent suburbs were more likely to stay in school and to go on to college than their peers who remained in the city (Rosenbaum, Kulieke, & Rubinowitz, 1988). At the same time, relocating families can simply further impoverish the neighborhoods from which they have moved, placing children who remain in those neighborhoods at even greater risk of starting school behind or staying behind. There also is evidence that schools in poor neighborhoods, given needed supports, can succeed at much higher levels with the students they serve (Blank, 2003; Rothstein, 2004).

Many schools that are *not* "ready for children" by the NEGP definition are located in low-income areas and serve children who are more likely to be at risk because of family, community, or environmental factors.

Further, many of these schools do not have the resources to hire qualified teachers and dedicate monies to addressing these children's specific needs (Lee & Burkam, 2002). Experts also agree that family and community supports are crucial to children's development and readiness.

Communities need to encourage schools and early childhood programs to communicate with each other and with related community supports.



Communities need to organize, demand, and support high quality early childhood programs not only for the developmental needs of the children, but also as an investment in the future workforce and economy.

Families need, as well, to be educated on how to recognize and choose high quality care for their children.

## ASSESSING READINESS

Although all children are born with the capacity for learning (Shonkoff & Phillips, 2000), assessing school readiness is important to the education of young children. Assessments help measure and monitor the current state of children's development and knowledge and can be used to guide classroom and individual kindergarten programming.

While there is general consensus that school readiness is multidimensional, how and whether to assess children at kindergarten entry is a controversial topic. The National Research Council (Bowman, Donovan, & Burns, 2001) cautions against the use of readiness assessments for determining whether children should enter kindergarten or for any "high stakes" testing that judges the performance of individual children. The Council stresses that development in children is highly individualized and there is a wide range of developmentally appropriate skills from child to child.

Holding children back from school entry is considered poor educational practice, although it is still in use in some districts (Shonkoff & Phillips, 2000). At the same time, there are appropriate uses of assessments of young children at the time they enter school—for identification of special needs, for use in instruction, for program evaluation, and for broad-based tracking of trends. The NEGP recommends that assessments should be developed particular to these uses and warns against the dangers of misusing them.

A child's development can progress faster or slower day to day, week to week rather than uniformly and consistently (Scott-Little, Kagan, Frelow, 2003), so assessments given at *only one point in time* can be very misleading about the future skills of a particular child.

### Use of Assessments

Most assessments revolve around focused planning for the individual child's education and are completed for one or more of the following purposes: (1) to track a child into a particular program, (2) to diagnose a special need or special gift that would necessitate more individualized

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instruction, or (3) as a composite to determine appropriate curriculum and general instruction for the entire classroom (Bruner & Copeman, 2003). The national Good Start, Grow Smart initiative (2002) pushes the assessment of children's language and literacy development in preschool, thus raising existing issues of the use and administration of readiness assessment for this young population (Scott-Little, Kagan, Frelow, 2003).

Saluja and colleagues (2000) reviewed position statements of various early learning groups and organizations on documenting children's readiness and found common recommendations for assessments. Based on this review, a good readiness assessment should do the following:

- Benefit children and the adults who work with children.
- Be used for the purposes for which it is designed.
- Be valid and reliable.
- Be age appropriate, using naturalistic observations to collect information as children interact in "real-life" situations.
- Be holistic, collecting information on all developmental domains (physical, social, emotional, and cognitive).
- Be linguistically and culturally appropriate.
- Collect information through a variety of processes and multiple sources (collection of children's work, observations of children, interviews with children, parent reports, etc.).
- Be used to guide instruction and not to determine children's placement in school.

A survey of early childhood experts (Horton & Bowman, 2002) reported the three most important characteristics of an assessment system to be (1) having a matched curriculum and assessment of children's knowledge, (2) having teacher meetings to discuss the assessment and program, and (3) having a monitoring self-study process. Portfolios, developmental screenings, and parent evaluations were also rated highly with the disclaimer that these procedures need to be completed by well-trained personnel to be beneficial. These types of assessments do take considerable time for the teacher to conduct, but they seem to be the least intrusive and most helpful forms of assessment. For example, the Work Sampling System (Meisels, Jablon, Marsden, Dichtelmiller, & Dorfman, 1994) is a curriculum-integrated, performance-based assessment system that documents and assesses children's knowledge, skills, behavior, and accomplishments based on naturally occurring daily activities in the classroom over the course of the year. Teachers use three elements to record and evaluate children's development and performance: (1) developmental guidelines and checklists, (2) collections of children's work in

portfolios, and (3) summary reports that integrate the checklists and portfolios.

In general, science supports the use of an assessment system to identify strengths and weaknesses of children for individualized education in the early years and to monitor child development from preschool to elementary school. Best practices suggest that information learned about children's development in preschool and shared with elementary school teachers can be used to guide each child's individual educational needs and capabilities in school. However, preschool and primary-aged children are still developing very rapidly and learning from their early environments, so such assessments should be conducted frequently (e.g., two to four times per year) to keep pace with the child's progress.

Given the rapid changes in the preschool years, using these assessments to select children for special programming lasting more than one year should be avoided. Further, an ongoing plan for evaluating the school readiness of children is necessary to assess the effectiveness of newly implemented programs and policies on child development. By monitoring the school readiness of a random sample of children on a regular basis (every few years), it will be possible to assess the effectiveness of newly implemented programs and policies on child development and to monitor that the curriculum is meeting the needs of the children.

Assessment tools themselves must continually be evaluated for ethnic and racial disparities that may be contributing to the reported gaps in school readiness between different populations (Rock & Stenner, 2005).

## **COSTS AND SAVINGS OF BEING READY FOR SCHOOL**

A growing body of research is focused on assessing the costs of a lack of readiness and the savings of readiness to the community. Children who do not have the supports necessary for achieving the skills to be ready for school are placed at risk for a number of problems, including remedial schooling, special education, special health services, behavior management programs, juvenile delinquency, and dropping out of school, all of which are costly to the community both in dollars and in workforce potential of the child and of the parent who takes time out of work to provide special care for the child (Bruner, 2004).

The Return on Investment (ROI) is a tool that allows economists to assess the

Longitudinal early childhood research of several exemplary early childhood programs has returns on investment in the \$4 to \$8 range for every dollar invested (Bruner, 2004; Lynch, 2004).

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value of a new investment. Based on this method, economists can examine early childhood programs in three ways: returns related to child growth and development, returns related to economic activity, and returns related to adult human capital development. Analyzing these returns together provides influential information in making the case for investment in early childhood programming (Bruner, 2004). A study by the Economic Policy Institute (Lynch, 2004) shows that,

Providing all 20% of the nation's three- and four-year-old children who live in poverty with a high-quality ECD [early childhood development] program would have a substantial payoff for governments and taxpayers in the future. As those children grow up, costs for remedial and special education, criminal justice, and welfare benefits would decline. Once in the labor force, their incomes would be higher, along with the taxes they would pay back to society. (p. vii–viii)

Further, the cost-benefit and public rates of return on investment in early childhood programming (a 12% return to the public), particularly for those most at risk, are better than the return on investments in physical capital or businesses. However, the public is not currently educated—let alone convinced—of this investment strategy. The benefits of such programs are gained in the distant future, which also adds to the difficulty in convincing the general public and legislators of the high rate of return (Klein, 2004).

The number of quality early childhood programs is so few in this nation that it would take a broad effort to increase quality across the country. Current governmental fiscal investment in early childhood education programs lags far behind what is spent per school-age child. A 12-state study recently showed that, for every public dollar invested in the education and development of school-aged children and every 70 cents invested in undergraduate-aged children, only 13.7 cents was invested in children in the early learning, preschool years (Bruner et al., 2003).

## CONCLUSIONS AND RECOMMENDATIONS

Getting young children ready to learn puts them on track for enjoying success in school and later in life. School readiness is an issue that affects the workforce of the future and, to some degree, the strength of the economy.

Helping all children enter school ready to learn is a complex task. Research suggests many factors play a role. These include children's

health; language, motor, social, and emotional development; cognition and general knowledge; how children make the transition to kindergarten; parents' income levels; neighborhood factors; SES; and access to quality early care and education. Studies suggest that many interventions addressing these issues can improve children's readiness. The following statements apply this research to practice:

- *The issue of school readiness should be addressed from the perspectives of the child, parent, school, and community.* Research has shown that successful preparation for school involves the developmental capabilities of the child and the commitment of the parents as their child's first teacher, the public school system to be ready for the individual needs of children, and the early childhood field and community to prepare children with the skills they need for success in school.
- *An assessment system should be implemented to identify strengths and weaknesses of children for individualized education and classroom programming in the early years and to monitor child development periodically from preschool to elementary school.* Research suggests that information learned about children's development in preschool, and shared with elementary school teachers, can better inform the school of each child's individual educational needs and capabilities at any given point in time.
- *Taking an economic perspective on the importance of early childhood programming is necessary for creating and increasing the number of quality programs for children.* Return on investment and rate of return studies demonstrate the benefits of quality early childhood programming for the public and our economy as a whole. Investing in early childhood will produce substantial savings for our nation that cannot be duplicated by business investment strategies.

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