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## Preschool Policy Brief

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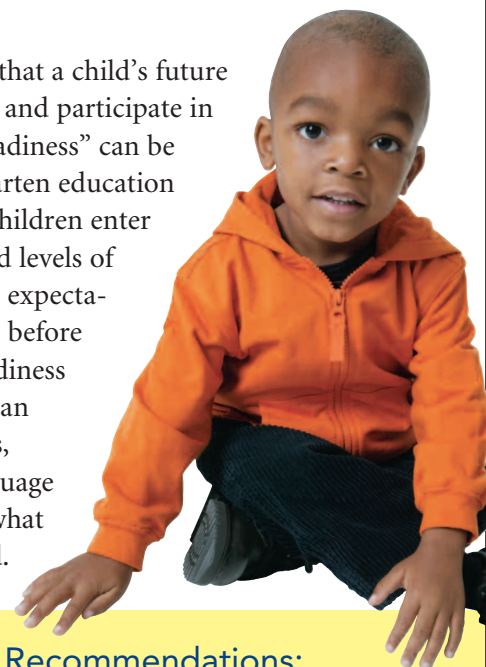
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# Prepared for Kindergarten: What Does “Readiness” Mean?

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Stakeholders at the local, state and federal levels agree that a child’s future academic success is dependent on being ready to learn and participate in a successful kindergarten experience. Yet, defining “readiness” can be a difficult endeavor. Due to their different prekindergarten education experiences and irregular and episodic development, children enter kindergarten with widely varying skills, knowledge, and levels of preparedness. Parents and teachers also have differing expectations for what children should know and be able to do before starting kindergarten. Furthermore, discussions of readiness do not always include how schools and communities can enhance and support children's kindergarten readiness, no matter what their socioeconomic status, home language background, or skill level. This policy brief addresses what we know about readiness and how it may be improved.



### What We Know:

- Most states consider children eligible for kindergarten if they turn 5 on or before October 16. Some age-eligible children are considered to be “not ready” for kindergarten and are held out for an additional year. The merits of this practice are questionable.
- Readiness testing is common. Although the predictive validity of these tests is limited, schools may use these test results to discourage parents from enrolling some age-eligible children in kindergarten.
- When readiness focuses on the skills children should have, teachers and parents have differing opinions about which skills are important. Parents focus more on cognitive skills, but teachers tend to view social-emotional development as equally important for success in kindergarten.
- Readiness partly depends on the ability of schools and communities to support children's entry into kindergarten from a wide variety of early childhood settings.
- Readiness is influenced by family and other environmental factors, and can be enhanced through effective preschool education.

### Policy Recommendations:

- Policymakers and educators should explicitly define readiness. This will assist parents, teachers, and others in preparing children for school success. It will make it easier to determine what supports each child needs to succeed in kindergarten.
- Leaders should realistically assess the supports present in communities, the ability of organizations to provide additional support, and the funding necessary to fill in the gaps.
- Quality preschool education can be used to enhance school readiness and children’s prospects for reaching higher levels of academic success.
- More resources should be devoted to developing kindergarten programs that better support the learning and development of children with widely varying strengths and weaknesses.
- Educators should discontinue using invalid tests to determine readiness for kindergarten. Such tests lead to poor decision-making, wasted funds, and lost opportunity for some children.

In most states, eligibility to enroll in kindergarten begins at age 5.<sup>1</sup> The month of September, therefore, not only marks the beginning of a new school year in the United States, but for many 5-year olds, also signals their entry into formal schooling. Although children may meet this specific age criterion, they vary widely in how well prepared they are for the demands of today's kindergarten. For one thing, children's development is irregular and episodic.<sup>1</sup> Children also vary considerably in their prekindergarten education experiences.<sup>3</sup> Thus, they enter kindergarten with widely varying skills and knowledge.<sup>4</sup> Some may have participated in various out-of-home care experiences, and had access to children's libraries and safe playgrounds.<sup>5</sup> They may also be able to recognize letters, numbers, and shapes, and tie their shoes.<sup>6</sup> Others may have grown up learning a language other than English at home, or have not been read to frequently.<sup>7</sup> Still others have participated in the kinds of activities that would seem to promote success in kindergarten, but have birthdays that make them considerably younger than their classmates. Despite being chronologically eligible for kindergarten, teachers and parents may question if children are "ready" for kindergarten.

The first aim of *The Goals 2000: Educate America Act*—signed into law 10 years ago—is that “all children in America will start school ready to learn.”<sup>8</sup> As a result, readiness has received attention at the local, state, and federal levels. Although researchers, educators, parents, and policymakers agree that a child's future academic success is dependent on being ready to learn and participate in a successful kindergarten experience,<sup>9</sup> the exact definition of readiness depends on who is doing the defining. Whether a child is “ready” will always depend on the demands kindergarten places on the child and the supports it provides, as well as the child's knowledge and skills.

This brief examines key issues for public policy related to school readiness, including the differing definitions of readiness, the relationship between school readiness and other factors in young children's lives, and challenges in readying children for kindergarten.

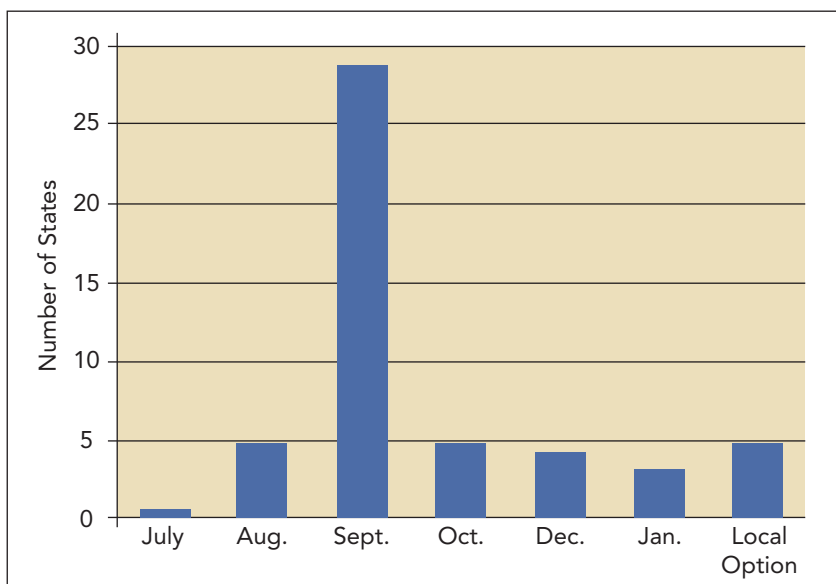
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## Eligibility for Kindergarten: Differences in State Statutes

State statutes are consistent in regard to requiring children to reach the chronological age of five either before enrolling or while they are students in a kindergarten program. Forty-four states and the District of Columbia have statutes specifying the dates by which children must turn five in order to be eligible for kindergarten.

As can be seen in Figure 1, kindergarten cutoff dates range from July 1 to January 1. The most popular date falls in September. Twenty-eight states require that children reach their fifth birthday some time during or before the end of this month. When looking at these cutoff dates overall, over three-fourths of states require that children reach the age of 5 on or before October 16.

Figure 1. State Kindergarten Eligibility Dates <sup>10</sup>



Thirty-nine states require children to reach the age of 5 on or before October 16.

It is interesting to note that cutoff dates that correspond with the beginning of the typical school year in the U.S. are a more recent trend. Whereas currently only five states and the District of Columbia have December or January eligibility dates, 30 years ago almost half of school districts enrolled children who did not turn 5 until December or January. Few school districts employed September cutoff dates at that time.<sup>11</sup> This suggests that schools have perceived an increased school readiness problem in recent decades and have changed the school entry age in an attempt to address the problem.

## Readiness and “Holding Out”

Despite the fact that most cutoff dates require children to be 5 by October 16, recent data from the Early Childhood Longitudinal Study – Kindergarten Class of 1998-1999 (ECLS-K)—a large-scale study of more than 20,000 kindergarten children—suggest that nationally about 7 percent of parents delay their age-eligible children’s entry into kindergarten for one year or more.<sup>12</sup> Although several studies have found no difference in the readiness skills of boys and girls,<sup>13</sup> delayed kindergarten entry appears to be more common for boys.<sup>14</sup> Characterized as “holding out,” “holding back,” or “redshirting,” this practice is based on the assumption that some children are not mature enough to participate in—and benefit from—the rigors of formal schooling.<sup>15</sup> This assumption reflects a maturationist perspective, which argues that giving children who lag behind in one or more areas of development an extra year before starting kindergarten can alleviate future academic problems.<sup>16</sup>

The evidence on whether there is merit to such an assumption is mixed. Some studies suggest that the developmental levels of children who are closest to the age cutoff may put them at a disadvantage for acquiring necessary academic skills.<sup>17</sup> For example, young kindergarten students are more likely to have low work-related skills, such as listening to directions and complying with teacher demands.<sup>18</sup> They have also been shown to have lower scores on tests focusing on information processing skills.<sup>19</sup> A small study of children in Kindergarten and Grade 1 who did—and did not—meet a March cutoff date showed that, although amount of schooling made a difference in children’s mental arithmetic skills, age predicted their ability to accurately conserve numbers.<sup>20</sup>

An examination of data from the ECLS-K showed that children who entered kindergarten a year older than their peers had higher math and reading achievement scores in both Fall and Spring of the kindergarten year. The differences in these scores were statistically significant and were between 5 and 6 points in math and 4 to 5 points in reading. This trend continued through the end of First Grade for reading.<sup>21</sup>

Several other studies also find that chronologically-young children continue to operate at a disadvantage in comparison to their older peers. For example, one of the earliest studies exploring this issue looked at the Metropolitan Achievement Test scores of 100 “underage” and “normal” age boys and girls enrolled in Grades 2 through 6. Results of this study showed that only 13 percent of the underaged children had scores that equaled those of their older classmates.<sup>22</sup> In an additional study of 480 Grade 4 students, those who were chronologically older had a statistically-significant advantage in their score on the Iowa Test of Basic Skills than their younger classmates.<sup>23</sup> A final study compared 45 pairs of gender- and intelligence-matched students who were either ages 5 or 6 upon enrolling in Kindergarten. The results of this study showed statistically significant differences in fifth and sixth grade reading test scores, with the difference particularly pronounced for males.<sup>24</sup>

Other studies find younger kindergartners make about the same progress in their math and reading skills as older children.<sup>25</sup> In addition, although young kindergartners may have lower abilities at the start of kindergarten, they can “catch up” in their academic and social abilities by the end of Grades 2, 3, or 4.<sup>26</sup> A recent longitudinal study examined the standardized test scores of more than 400,000 California children. This study found that older students who had not been previously retained or held out of kindergarten had higher mean reading scores in Grades 2 and 6. By Grade 10, however, any advantage had disappeared.<sup>27</sup>

Furthermore, some studies find no differences from age (within grade) in some aspects of children's social skills and referrals for special services. For example, in a study conducted in the late 1970s, there was no correlation between children's age at entry and kindergarten teachers' ratings of hostility, hyperactivity, or anxiety.<sup>28</sup> An additional study of 476 kindergartners and first graders found that "being the youngest" was not related to children's social acceptance.<sup>29</sup> In a third study of 699 students, younger kindergartners did not experience more psychological or educational evaluation referrals.<sup>30</sup> In another study of 223 students in Grades 2 through 6, there were no significant differences between those assessed as "developmentally ready" or having received an extra year to mature before beginning Kindergarten in terms of referrals for speech and language, remedial reading or math, or counseling services.<sup>31</sup>

Although being a younger kindergartner has been correlated with kindergarten retention<sup>32</sup> or referrals to transitional first-grade programs,<sup>33</sup> holding out does not necessarily provide an advantage in terms of retention rates in Grades 1 through 5.<sup>34</sup> A nationally-representative sample of children between the ages of 7 and 17 showed that being "old for grade"—whether because of being retained *or held out*—was also correlated with increased rates of behavior problems.<sup>35</sup>

The lack of consistency in findings across studies may in part reflect the effects of other uncontrolled factors that influence outcomes for students who were older at kindergarten entry. These include family and child characteristics, and prior social and educational experiences in homes, neighborhoods, and preschool programs.<sup>36</sup> In the end, the practice of "holding out" ensures that kindergartners within the same class will range in age from not yet 5 years old to older than age 6, and have an even wider range of skills and experiences. This situation may further exacerbate confusion regarding the skills and attributes children need to be considered "ready,"<sup>37</sup> and create difficulties for teachers in adequately addressing the individual needs of all students.

## Readiness Assessments

If not solely defined by age, how has readiness been additionally defined? Readiness has often been defined as a child's skills, behaviors, or attributes in relation to the expectations of individual classrooms or schools.<sup>38</sup> As a result, many schools formally assess skills or knowledge in order to determine a child's "readiness status." Various instruments have been used to assess children's knowledge and skills prior to kindergarten since the early 1900s.<sup>39</sup> There are currently over 35 tests, the majority of which are standardized, that teachers or other school personnel might use to assess kindergartners. At least 6 of these standardized tests are specifically designed to assess children's readiness or developmental skills.<sup>40</sup>

Only 13 states require schools to conduct screening or assessment of children entering kindergarten.<sup>41</sup> However, 69 percent of public schools and 47 percent of private schools throughout the country administer such tests before a child enrolls in kindergarten.<sup>42</sup> These assessments are not reserved for students from particular socio-economic backgrounds, as the percentage of public schools engaging in this practice does not vary by school poverty rates. Although the results of such assessments may be used to determine instructional needs or class placements, they may also be used to discourage parents from enrolling their age-eligible children in kindergarten.<sup>43</sup>

There are key points to consider when using assessments. First, assessments should be used for their intended purpose, and should not be considered interchangeable. For example, screening tests designed to identify children who should receive in-depth assessment to determine whether they have a disability or serious developmental delay should not be used to determine whether a child is ready for school.<sup>44</sup> Those administering or interpreting the test need sufficient formal training as well.<sup>45</sup>

Second, good assessments will provide reliable information that can inform teachers' and school administrators' decisions. They should accurately reflect children's abilities, and be responsive to children's cultural and linguistic diversity. Children should not be asked to demonstrate isolated skills out of context, at only one point in time, or outside of their normal learning environment.<sup>46</sup>

Third, assessments should also have adequate reliability for predicting children's future school success.<sup>47</sup> A review of the predictive values of many readiness tests shows that their correlation to future achievement ranges from .11 to .63.<sup>48</sup> A meta-analysis<sup>49</sup> of 70 longitudinal studies concluded that preschool school readiness screenings predicted only about 24 percent of the variability in children's kindergarten and/or Grade 1 academic and cognitive competency, and 7 percent of the variability in their social/behavioral competency.<sup>50</sup>

Although two studies<sup>51</sup> have demonstrated a relationship between specific aspects of children's kindergarten readiness scores and their later scores on Grade 4 achievement tests, both of these studies are limited by their samples. Each tested students who were primarily white and middle class, and from a single school district. A study suggesting that the Gesell School Readiness Screening Test can predict kindergarten success or failure has similar limitations.<sup>52</sup> An additional large-scale study assessed the predictive validity of several early childhood screening measures for problems such as retention in Kindergarten through Grade 3, lower standardized test scores in Grade 2, or behavior problems in Grade 3. Although this study found that the tests accurately predicted between 96 and 99 percent of those children who did *not* develop these problems, they were far less successful (between 5 and 55 percent) in predicting children who did.<sup>53</sup>

## Teachers' Conceptions of Readiness

Although formal readiness assessments are prevalent in many schools, teacher perceptions of the demands of kindergarten can play a role in determining which children are ready for this grade. A study conducted by the Carnegie Foundation in 1990 queried more than 7,000 teachers about the numbers of students who were "ready" for kindergarten based on questions related to children's cognitive, social, emotional, and physical development. These items included children's ability to communicate and pay attention, their ability to take turns and be sensitive to other children's feelings, and their overall health. Overall, 35 percent of students were considered not ready to successfully participate in kindergarten. Within individual states, this amount ranged from 23 percent in North Carolina to 47 percent in Hawaii.<sup>54</sup>

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***Kindergarten Teachers Overall.*** Kindergarten teachers' perceptions about key academic and social readiness skills vary. In one of the earliest studies of kindergarten teachers' views on readiness, just five items were rated as very important. These included children being able to identify four colors and major body parts and respond to both their name and warning words.<sup>55</sup>

In a study of 1,339 kindergarten teachers' views on school readiness conducted in 1993, over 75 percent of respondents felt that the top three readiness attributes were for a child to be a) physically healthy, rested, and well nourished, b) able to communicate his or her thoughts and needs in words, and c) curious and enthusiastic in their approach to new activities. More than half of the teachers in this study also indicated that readiness included not being disruptive, being sensitive to other children's feelings, and being able to take turns and share. Ten percent or less thought being able to count to 20 or more or knowing the letters of the alphabet were important in terms of kindergarten readiness.<sup>56</sup>

More recent data from the ECLS-K study showed the importance of nonacademic readiness skills for kindergarten teachers. Specific academic tasks—such as using a pencil, knowing the names of colors and shapes, recognizing letters, or counting to 20 or more—were less likely to be rated as essential readiness qualities. With the exception of being able to use a pencil or brush, these tasks were rated as essential or very important by less than one-third of teachers. Conversely, over 75 percent of the 3,305 kindergarten teachers sampled in this study felt being able to follow directions and communicate both needs and thoughts, as well as not being disruptive, were more essential or very important readiness skills.<sup>57</sup> Additional smaller studies also find teachers believe nonacademic skills are more important for readiness.<sup>58</sup>

***Urban Kindergarten and Preschool Teachers.*** Although some kindergarten teachers feel that the emphasis on state standards and accountability has forced them to define readiness in terms of children's academic knowledge and abilities,<sup>59</sup> the emphasis on academic skills appears to be stronger in studies focused on the perceptions of kindergarten and preschool teachers of low-income children. For these teachers, readiness is more often predicated on children's academic skills—such as recognizing numbers and letters of the alphabet—and less often on children's social skills.<sup>60</sup> Perceptions about the importance of these skills also vary by teachers' ethnicity. In the small number of studies examining attitudes about key readiness skills via teachers' ethnicity, more African-American and Hispanic teachers see academic skills as crucial for readiness than white, non-Hispanic teachers.<sup>61</sup>

## Parents' and Children's Definitions of Readiness

Studies of parents' attitudes about readiness show that most parents believe children can make a more effective transition into kindergarten if they have positive dispositions about going to school and can adjust socially.<sup>62</sup> However, their views about the academic and behavioral skills that are key to kindergarten readiness appear to differ from teachers' opinions.<sup>63</sup> These differences are illustrated by two large-scale studies conducted in 1993 with more than 1,300 kindergarten teachers and more than 4,000 preschoolers' parents from throughout the U.S. Ten percent or less of the kindergarten teachers felt counting to 20 or more and knowing letters was needed for readiness. In contrast, at least 58 percent of preschoolers' parents felt this was essential.<sup>64</sup>

Parents' viewpoints also vary according to their socioeconomic status. When examined via parents' educational backgrounds, almost three-fourths of parents who did not graduate from high school rated counting to 20 and knowing the letters of the alphabet as essential or very important. Conversely, only 41 to 50 percent of college graduates felt their children needed these skills in order to be considered ready for kindergarten.<sup>65</sup>

Another study examining the readiness beliefs of 355 low-income, urban parents in one New York school district showed that between 76 and 82 percent of parents felt it was "absolutely necessary" that children entering kindergarten know their letters and colors and be able to count to 10 or 15. Seventy percent of these parents also felt children should know their address and phone number.<sup>66</sup> When examining the beliefs of 156 Head Start parents within this same school district, these percentages were even higher. Between 80 and 88 percent of parents within this specific cohort felt these readiness skills were important.<sup>67</sup>

Head Start and non-Head Start parents whose children speak English as a second language also view being able to communicate in English as a key readiness skill.<sup>68</sup> Here again, however, parents' views may differ from teachers. In the study utilizing the viewpoints of both 355 urban parents and 156 Head Start parents, 70 percent of African-American and Hispanic parents overall thought communicating in English was a necessary aspect of readiness, but just 30 percent of kindergarten teachers in this same district felt similarly.<sup>69</sup> Seventy-four percent of Head Start parents felt children needed to express their feelings and needs in English in order to be ready for kindergarten.<sup>70</sup>

Children's views about the skills or approaches to learning that are needed as one starts kindergarten have not received much attention. Instead, studies have primarily focused on what children think they will learn or do in kindergarten, what their experiences have been, or self-ratings of their academic or social competence as kindergarten students.<sup>71</sup> A small number of published studies focusing on children's perspectives related to "what it takes" to be ready for kindergarten have been conducted in Australia as part of the Starting School Research Project. In these studies, children were asked to name the things that are important as they start school. The top answer for children was knowing—and following—a teacher's rules, followed by becoming familiar with where things were and what to do, and knowing how to make friends.<sup>72</sup>



## Ready Schools

Schools, classrooms, and teachers within the same district may have different definitions of readiness, meaning that a child who is considered “ready” in one milieu may also be considered “not ready” in another.<sup>73</sup> The effect of the “disconnect” between expectations is illustrated in a case study of more than 1,200 low-income kindergarten students in Dayton, Ohio, 58 percent of whom attended either Head Start or the Dayton Public School’s Title I preschool program. The Head Start students were no better prepared for kindergarten in terms of cognitive and language readiness skills than children who had unknown preschool experiences, and their skills were lower than those of children who had been in a Title I preschool. Unlike Title I preschool, however, Head Start programs did not focus on such readiness skills in their programs, but could emphasize them if they received specific guidance and assistance from the Ohio’s Department of Education.<sup>74</sup>

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In an attempt to counter this type of disconnect, instead of defining readiness solely as a set of traits within an individual child, some states and school districts have also approached readiness as an interactive responsibility of the school and community. At its broadest, readiness is considered to include the “social, political, organizational, educational, and personal resources that support children’s success at school entry.”<sup>75</sup> As a result, the question is not just “is a child ready for school?,” but also if schools and communities are ready to meet the diverse needs of kindergarten-aged children.

**What are “Ready Schools?”** This approach is part of the definition of readiness advocated by the National Education Goals Panel. As defined by this panel, ready schools share three sets of key characteristics, with the first set focusing on necessary supports for children. For example, in an attempt to lessen the cultural, linguistic, or contextual constraints that can make children’s adjustment to kindergarten difficult, ready schools pay attention to transition issues. They also strive to forge a link to children’s previous preschool experiences. In addition, because children have participated in many different forms of care and educational experiences before enrolling in kindergarten, ready schools can adjust their instructional approaches. This allows schools to be more responsive to individual children’s needs. This last characteristic also requires schools to have a variety of highly qualified professional staff, as well as environments that are conducive to learning. Staff must also have positive expectations about children’s abilities to learn and succeed in school, no matter what their socioeconomic or linguistic background.<sup>76</sup>

The second set of “ready school” factors focuses on teaching and learning, and mirror the literature on effective schooling.<sup>77</sup> More specifically, ready schools support the professional development of all those who interact with children. They also adopt educational approaches that provide support to children, can be monitored and adjusted according to students’ needs and can facilitate parental involvement. Research from the National Center for Family and Community Connections with Schools has found that early care and education programs that have family components can boost children’s educational success. Strategies in which schools help parents support children’s literacy and numeracy skills, for instance, can produce gains, particularly among children from low- and middle- income families. Since little research has been conducted on which family interventions work best, however, more research needs to be done in this area.<sup>78</sup>

Central to the ready schools concept is the principle that, rather than relying on one-size-fits-all approaches to learning and teaching, teachers and administrators continually fine-tune programs and adopt “what works” for their specific situations. If practices and programs are not benefiting students, ready schools alter or even abandon those programs. Schools also take responsibility for each child’s success and determine the most appropriate ways to best assess individual children’s progress. Lastly, these efforts demand that ready schools have strong and articulate leadership and the ability to determine which resources schools need.<sup>79</sup>

Finally, ready schools recognize that children can benefit from support outside the school, including nonacademic supports relating to health care, nutrition, and social services. This recognition should serve as a catalyst for facilitating collaborations with programs and services that can provide families with the types of supports they need. Ready schools also partner with parents and other community organizations and institutions—such as museums, libraries, and two- and four-year colleges—in order to learn about new ways to support children’s learning and provide families with out-of-school enrichment opportunities.<sup>80</sup>

***State Initiatives Related to Ready Schools.*** Despite attention from both research and advocacy,<sup>81</sup> there is limited information on how to promote ready schools on a statewide basis. Several states have recently developed tools to assist in this process. For example, Connecticut released a report detailing how the state is doing in helping young children be ready for school and how the state can “do better” for its young children. Included in the report is a chapter on ready schools, which looks at the average kindergarten class size, the number of kindergarten teachers with early childhood certification, and the number of children in full-day kindergarten. It also stresses the need for developmentally appropriate curricula for kindergartners, and continued professional development for their teachers. In addition, the report notes that there is an “information gap” in regard to how many of the state’s schools have preschool to kindergarten transition programs in place.<sup>82</sup>

In North Carolina, the State Board of Education has teamed up with various stakeholders to produce recommendations for defining and assessing school readiness for the state’s young children. Ready schools are considered to play a key role in this framework as well. Principals, teachers, and parents can assess their kindergarten program’s readiness state by completing an inventory of 14 items, including the physical environment of the classroom, the curriculum, and the services offered to—and collaboration with—parents.<sup>83</sup>

Vermont has also begun to assess its schools’ readiness for children. Kindergarten teachers and school principals were asked whether their schools offered various transition initiatives and community partnerships. They also were surveyed about the numbers of kindergarten teachers with early childhood certification, average kindergarten class size, and the source of their instructional practices. Respondents also indicated what types of supports were available to both teachers and students.<sup>84</sup>

## Readiness Risk Factors

Readiness can be adversely affected by various risk factors. Studies show that differences in children’s cognitive, language, and social skills upon entry to kindergarten are correlated with families’ poverty status, parents’ educational levels or ethnic backgrounds, and children’s health and living environments.<sup>85</sup> More specifically, kindergartner’s reading and math abilities, general knowledge, and overall health can be lower when parents have low levels of education and the family receives some type of public assistance.<sup>86</sup> Living in an unsafe or poverty-stricken neighborhood and having a minimal family income are correlated with scoring low on an assessment of verbal abilities, and thus being “at-risk” for experiencing problems in school.<sup>87</sup>

Living in a rural area can also indirectly affect children’s readiness. Limited employment opportunities may mean parents have to work more than one job to provide food and housing, decreasing the amount of time they can spend with their children. Families may also have less access to public transportation, libraries, and health care services, and little choice when it comes to adequate child care. Rural schools may also be less able to serve the diverse needs of students from wide geographic areas.<sup>88</sup>

In sum, although none of these risk factors “guarantee” that children will not be ready for kindergarten, children from low-income or less-educated families are less likely to have the supports necessary for healthy growth and development, resulting in lower abilities at school entry.

## States’ Efforts in Supporting Children’s Readiness

Given the role these socioeconomic and environmental factors can play in readiness, states are undertaking efforts to support children’s readiness *before* they enroll in kindergarten. Seventeen states are participating in the *School Readiness Indicators Initiative*. The goal of this initiative is to develop a list of indicators that can help inform policies that will enhance readiness.<sup>89</sup> For example, Rhode Island has begun to track the percentages of its young children who are at risk for not being ready because of family and developmental factors.<sup>90</sup> Arizona recently developed a School Readiness Action Plan,<sup>91</sup> which outlines the actions—and dollars—necessary to improve children’s access to health care, improve the quality of early care and education in the state, and increase the qualifications of early childhood education teachers.

Although not participating in this specific initiative, Connecticut recently published indices related to the health and child development, safety and child welfare, and economic stability of families with young children, as well as their access to early care and education. These indices are used as benchmarks in reaching readiness-related goals.<sup>92</sup> South Carolina’s legislature instituted *First Steps to School Readiness* in 1999. The goals of this effort are to improve the delivery of services for young children and their families, and in doing so, provide children with the health, social, and developmental support they might need in order to enter kindergarten ready to learn. County partnerships determine local needs and how programs might best be implemented. The initiative also has supported expansion of preschool programs and quality enhancement activities for child care providers.<sup>93</sup>

## The Role of Preschool in Supporting Readiness

These initiatives targeting children’s health and development are crucial for reducing the numbers of children at risk for school failure. However, a recent review of the variables contributing to racial and ethnic gaps in school readiness concludes that “the most promising strategy” for supporting readiness “is to increase access to high-quality center-based early childhood education for all low-income three- and four-year olds.”<sup>94</sup>

Although a number of large-scale studies demonstrate that participation in such a program positively influences all children’s kindergarten readiness,<sup>95</sup> the positive effect of these programs can be even more pronounced for disadvantaged children. This effect was first found through studies on model demonstration preschool programs started in the 1960s and ‘70s, including the Perry Preschool and Abecedarian programs.<sup>96</sup> The effects of these programs on disadvantaged children’s cognitive development and academic skills at kindergarten entry included gains in IQ scores and achievement test scores.

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Although most children do not attend model programs, additional studies find other early care and education programs can also benefit disadvantaged children’s readiness. A study conducted in North Carolina in the early 1990s showed that amount of time in child care predicted better letter recognition and math skills upon entry to kindergarten for children whose mothers had obtained less than 13 years of education and lived in poor literacy environments. The impact of child care on children whose mothers had more than 13 years of education was negligible.<sup>97</sup>

A study using ECLS-K data showed that although children enrolled in some type of center-based care performed better on tests of reading and math skills than those not enrolled, these effects were even larger for children who lived in poverty, had mothers who did not graduate from high school or speak English, or were single parents. The authors of this study cite skills that translate into increases from the 30<sup>th</sup> to the 35<sup>th</sup> and 37<sup>th</sup> percentile in math and reading skills, respectively.<sup>98</sup>

Another recent study of children who were able to enroll in a high-quality urban Head Start program showed they had faster rates of growth in vocabulary, phonemic awareness, and preliteracy skills than those who were waitlisted and thus unable to enroll.<sup>99</sup> Similarly, an evaluation of the Michigan School Readiness Program (MSRP) found that kindergartners who had attended MSRP scored significantly higher on five out of six domains of the High/Scope Child Observation Record and received higher ratings from their teachers than those who did not have this—or any other—preschool experience.<sup>100</sup>

School readiness is also a critical issue for middle-income families. The readiness gap among middle-income children, while not as large as that for low-income children, is arguably more pervasive due to the sheer number of children involved. A 2002 Maryland survey, for instance, found only 52 percent of children entering kindergarten to be fully ready.<sup>101</sup> Many middle-income families lack access to the kinds of preschool educations that send them to kindergarten ready to learn; often because family income is too high to qualify for programs for disadvantaged children but not high enough to afford high-quality programs. Yet middle-income children gain from participating in high-quality preschool, as well.

A study of Oklahoma's universal prekindergarten program found that some of the greatest gains were not for children with the lowest incomes but for children in a somewhat higher income category.<sup>102</sup>

***Preschool Quality Matters.*** The effects of programs on children's skills are related to their overall quality. Preschool quality is reliant on various structural components, such as the number of children in a classroom, the staff-child ratio, and the physical environment of the room. Quality is also dependent on the kinds of experiences children have within classrooms on a day-to-day basis. These experiences would include the activities children participate in, the interactions they have with other children, and the interactions they have with their teachers. In addition, in order for these experiences to be considered both high-quality and "developmentally appropriate," they should also take into account how children develop and learn, and how that development and learning might best be supported. Perhaps not surprisingly, one of the most crucial variables leading to high-quality preschool is teacher education and training.<sup>103</sup>

The importance of preschool quality in supporting children's readiness is illustrated in many studies. For example, the large-scale Cost, Quality & Child Outcomes Study found that attending higher quality programs was correlated with better language scores and math skills for children from diverse backgrounds. In some cases, the effects of higher quality programs were even stronger for children considered to be at risk.<sup>104</sup>

Researchers using ECLS-K data have found that although kindergarten reading and math scores were higher for those children who had participated in some sort of center-based care the year prior to enrollment in kindergarten, the largest benefits were for those children attending state-funded prekindergarten programs.<sup>105</sup> This difference in outcomes is most likely related to the fact that teachers in state-funded prekindergarten programs are required to obtain a Bachelor's degree related to Early Childhood more frequently than teachers in private preschool programs or Head Start. State-funded programs may also have lower student-teacher ratios or implement a higher quality curriculum.<sup>106</sup>

Many other studies confirm the importance of quality and preschool teacher training for children's readiness. For example, a study of 451 low-income families in California and Florida found that participation in a center-based program increased the school readiness of children as compared to those who remained in the care of a relative or neighbor. Children with the highest scores were in centers with more educated caregivers.<sup>107</sup> North Carolina's Smart Start was initiated in 1993 as a means to helping children enter school ready to succeed. Children who attended Smart Start programs that participated in initiatives designed to raise teachers' qualifications, pay, knowledge, and classroom practice had better cognitive and language skills than those who did not.<sup>108</sup> Participation in greater numbers of Smart Start activities was significantly correlated with preschool classroom quality, which in turn was correlated with children scoring higher on readiness indicators.<sup>109</sup>

## Policy Recommendations

Local, state, and national policymakers seeking to increase readiness face three key challenges: defining readiness, determining how it might best be nurtured and enhanced, and putting in place the programs and policies that will help children be ready for kindergarten.

***Defining Readiness.*** Young children’s development is irregular and episodic, and difficult to accurately assess, particularly using conventional tests at a single point in time. Their performance is highly susceptible to immediate and transitory circumstances and can also be affected by physical health, nutrition, and living conditions. Over time, these contextual factors may also affect their knowledge, skills, and behavior. Children’s pre-kindergarten experiences are highly unequal, whether in the home and community or in preschool programs.

Thus, the “supply” of readiness skills children bring to kindergarten varies widely. However, the impact of these variations depends on the demands that kindergarten and first grade place on children, and these also are variable. There is a lack of agreement regarding the implicit and explicit demands of teachers, schools, state standards, and readiness tests. Children who are seen as ready in one classroom or community—whether the result of a cutoff date or specific assessment—may not be similarly viewed elsewhere.

There is the further question of what type of alternative is best for those children who are age-eligible for kindergarten, but deemed “not yet ready.” Schools that view readiness as an innate, “unteachable” ability of the child may simply urge families to give children an extra year of time to catch up. In the meantime, little attention may be paid to the environmental factors that limit readiness. Thus, these children may make little progress in the intervening year, while parents or the public bear the cost of an additional year of school. Boys with additional socioeconomic risk factors, in particular, are often over-represented among those children who are held out.<sup>110</sup>

By carefully defining readiness in terms of expectations for children and schools, it may be possible to improve the preparation of both, and create a much better match between children and schools so that more children succeed and maximize their learning during the kindergarten and first grade years. A definition of readiness must encompass what is “good enough” in each domain, while recognizing the unevenness of early development. Every child need not meet the highest readiness standard in every domain, and a distribution of abilities is to be expected. Despite our best efforts, some children will be less well-prepared than others.

The question will then remain at what point and under what circumstances will it make sense to delay entry to kindergarten? Parents and schools will have to make these decisions together. Our view is that delayed entry is rarely desirable if schools are well prepared. Pushing back the school entry age is unlikely to be a satisfactory solution, as well. Some children will still be the youngest and the costs of delay have simply been foisted on parents. Disadvantaged children will find themselves falling further behind as they go longer without adequate public support for their learning and development. Moreover, some children will continue to be the youngest, and teachers who focus their teaching on the average child—rather than individualize—will simply increase their demands for knowledge, skills, and behavior.

***Determining What Children And Schools Need In Order To Best Nurture And Enhance Readiness.*** An adequate definition of readiness and a way to evaluate it will help policymakers work “backwards” from the goal of school success and to specify the programs and supports children and schools need in order to nurture and enhance children’s readiness. A high-quality preschool program is one effective policy for improving readiness, especially for disadvantaged children. However, there are many policy choices to be made regarding such programs, including program content, length of day, class size, and teacher qualifications. The content, intensity, and effectiveness of the preschool program will determine how much readiness is improved.

Program changes may be needed within the K-12 milieu, as well, particularly in terms of kindergarten curriculum, length of day, class size, and teacher professional development. With such a wide range of abilities among children, developmentally appropriate practice and individualization are important. Schools should also avoid the use of invalid readiness tests.

Equally important is an accurate determination of how soon children should learn specific content. What should they learn—and when—in order to make adequate progress toward state standards? However, do these learning goals make sense in terms of children’s progress up to that point? The demands of kindergarten have increased in recent years as states have responded to a public push for higher standards. As a result, more children are likely to have problems with school readiness. The demand for certain skills and behavior may be inappropriate, and therefore better if postponed because of the present difficulties for many children. This is particularly true if later acquisition does not impede adequate progress toward elementary school goals.

***Determining An Adequate Level Of Investment.*** Finally, as is the case with any policy effort, simply initiating a policy does not necessarily mean its goals will be realized.<sup>111</sup> Good policymaking on readiness begins with a frank assessment of the resources in place and the capacity of organizations to collaborate in supporting children’s readiness for school. Policymakers will then need to determine what investments are necessary to help all children begin school ready for kindergarten.

## Endnotes

- <sup>1</sup> Saluja, G., Scott-Little, C., & Clifford, R. M. (2000). Readiness for school: A survey of state policies and definitions. *Early Childhood Research & Practice*, 2(2). Available at <http://ecrp.uiuc.edu/v2n2/saluja.html>
- <sup>2</sup> Shonkoff, J. P., & Phillips, D. A. (Eds.). (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.
- <sup>3</sup> Barnett, W. S., & Yarosz, D. J. (2004). Who goes to preschool and why does it matter? *Preschool Policy Matters*, 8. New Brunswick, NJ: NIEER.
- <sup>4</sup> Zill, N. (1999). Promoting educational equity and excellence in kindergarten. In R. C. Pianta and M. J. Cox (Eds.), *The transition to kindergarten* (pp. 67-104). Baltimore: Paul H. Brookes Publishing Co.
- <sup>5</sup> Piotrkowski, C. S., Botsko, M., & Matthews, E. (2000). Parents' and teachers' beliefs about children's school readiness in a high-need community. *Early Childhood Research Quarterly*, 15, 537-558.
- <sup>6</sup> Coley, R. J. (2002). *An uneven start: Indicators of inequality in school readiness*. Princeton, NJ: ETS.  
West, J., Denton, K., & Germino-Hausken, E. (2000). *America's kindergartners: Findings from the Early Childhood Longitudinal Study, kindergarten class of 1998-99, Fall 1998*. Washington, DC: National Center for Education Statistics.  
Zill, N., Collins, M., West, J., and Germino-Hausken, E. (1995). *Approaching kindergarten: A look at preschoolers in the United States*. National Household Education Survey. Washington, DC: National Center for Education Statistics.  
Zill, N., & West, J. (2001). *Entering kindergarten: A portrait of American children when they begin school: Findings from The Condition of Education 2000*. Washington, DC: National Center for Education Statistics.
- <sup>7</sup> Honig, A. S., & Shin, M. (2001). Reading aloud with infants and toddlers in child care settings: An observational study. *Early Childhood Education Journal*, 28, 193-197.  
Kuo, A. A., Franke, T. M., Regalado, M., & Halfon, N. (2004). Parent report of reading to young children. *Pediatrics*, 113, 1944-1951.  
West et al. (2000).
- <sup>8</sup> PL 103-227.
- <sup>9</sup> Ladd, G. W., & Price, J. M. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development*, 58, 1168-1189.  
Ramey, S. L., Ramey, C. T., & Lanzi, R. G. (2004). The transition to school: Building on preschool foundations and preparing for lifelong learning. In E. Zigler & S. J. Styfco (Eds.), *The Head Start debates*. Baltimore: Paul H. Brookes Publishing Co.  
Snow, C., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Research Council.
- <sup>10</sup> Education Commission of the States (2004).
- <sup>11</sup> De Cos, P. L. (1997). *Readiness for kindergarten: What does it mean?* Sacramento, CA: California Research Bureau.
- <sup>12</sup> Datar, A. (2003). *The impact of changes in kindergarten entrance age policies on children's academic achievement and the child care needs of families*. Santa Monica, CA: RAND.
- <sup>13</sup> Datar (2003). Stipek, D. J., & Ryan, R. H. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology*, 33, 711-723.
- <sup>14</sup> Bellisimo, Y., Sacks, C. H., & Mergendoller, J. R. (1995). Changes over time in kindergarten holding out: Parent and school contexts. *Early Childhood Research Quarterly*, 10, 205-222.  
Byrd, R. S., Weitzman, M., & Auinger, P. (1997). Increased behavior problems associated with delayed school entry and delayed school progress. *Pediatrics*, 100, 654-661.  
Graue, M. E., & DiPerna, J. (2000). Redshirting and early retention: Who gets the "gift of time" and what are its outcomes? *American Educational Research Journal*, 37, 509-534.  
May, D. C., & Kundert, D. K. (1995). Does delayed school entry reduce later grade retentions and use of special education services? *Remedial & Special Education*, 16, 288-294.



- <sup>15</sup> Marshall, H. H. (2003). Opportunity deferred or opportunity taken? An updated look at delaying kindergarten entry. *Beyond the Journal, Young Children on the Web* [website]. Available at <http://www.journal.naeyc.org/btj/200309/DelayingKEntry.pdf>. Zill, N., & West, J. (1997). *The elementary school performance and adjustment of children who enter kindergarten late or repeat kindergarten: Findings from national surveys*. Washington, DC: National Center for Education Statistics.
- <sup>16</sup> Ilg, F. L., Ames, L. B., Haines, J., & Gillespie, C. (1978). *School readiness: Behavior tests used at the Gesell Institute*. New York: Harper & Row, Publishers. May, D. C., & Welch, E. (1984). Developmental placement: Does it prevent future learning problems? *Journal of Learning Disabilities*, 17, 338-341. Meisels, S. J. (1998). *Assessing readiness*. Ann Arbor, MI: Center for the Improvement of Early Reading Achievement.
- <sup>17</sup> Uphoff, J. K., & Gilmore, J. (1985). Pupil age at school entrance – How many are ready for success? *Educational Leadership*, 43, 86-90.
- <sup>18</sup> McClelland, M. M., Morrison, F. J., & Holmes, D. L. (2000). Children at risk for early academic problems: The role of learning-related social skills. *Early Childhood Research Quarterly*, 15, 307-329.
- <sup>19</sup> Kinard, E. M., & Reinherz, H. (1986). Birthdate effect on school performance and adjustment: A longitudinal study. *Journal of Educational Research*, 79, 366-372.
- <sup>20</sup> Bisanz, J., Morrison, F. J., & Dunn, M. (1995). Effects of age and schooling on the acquisition of elementary quantitative skills. *Developmental Psychology*, 31, 221-236.
- <sup>21</sup> Datar (2003).
- <sup>22</sup> Carter, L. B. (1956). The effect of early school entrance on the scholastic achievement of elementary school children in the Austin public schools. *Journal of Educational Research*, 50, 91-103.
- <sup>23</sup> Dickinson, D. J., & Larson, J. D. (1963). The effects of chronological age in months on school achievement. *Journal of Educational Research*, 56, 492-493.
- <sup>24</sup> Crosser, S. L. (1991). Summer birth date children: Kindergarten entrance age and academic achievement. *Journal of Educational Research*, 84, 140-146.
- <sup>25</sup> Datar (2003). Morrison, F. J., Griffith, E. M., & Alberts, D. M. (1997). Nature-nurture in the classroom: Entrance age, school readiness, and learning in children. *Developmental Psychology*, 33, 254-262. Shepard, L. A., & Smith, M. L. (1986). Synthesis of research on school readiness and kindergarten retention. *Educational Leadership*, 44(3), 78-86.
- <sup>26</sup> Crone, D. A., & Whitehurst, G. J. (1999). Age and schooling effects on emergent literacy and early reading skills. *Journal of Educational Psychology*, 91, 604-614. Kurdek, L. A., & Sinclair, R. J. (2001). Predicting reading and mathematics achievement in fourth-grade children from kindergarten readiness scores. *Journal of Educational Psychology*, 93, 451-455. Stipek, D., & Byler, P. (2001). Academic achievement and social behaviors associated with age of entry into kindergarten. *Applied Developmental Psychology*, 22, 175-189.
- <sup>27</sup> Grissom, J. B. (2004). Age and achievement. *Education Policy Analysis Archives*, 12(49). Available at <http://epaa.asu.edu/epaa/v12n49/v12n49.pdf>.
- <sup>28</sup> Kinard & Reinherz (1986).
- <sup>29</sup> Spitzer, S., Cupp, R., & Parke, R. D. (1995). School entrance age, social acceptance, and self-perceptions in kindergarten and 1st grade. *Early Childhood Research Quarterly*, 10, 433-450.
- <sup>30</sup> DeMeis, J. L., & Stearns, E. S. (1992). Relationship of school entrance age to academic and social performance. *Journal of Educational Research*, 86, 20-27.
- <sup>31</sup> May & Welch (1984).

- <sup>32</sup> Mantzicopoulos, P., & Morrison, D. (1990). Characteristics of at-risk children in transitional and regular kindergarten programs. *Psychology in the Schools*, 27, 325-332.
- <sup>33</sup> Mantzicopoulos, P. Y., & Neuharth-Pritchett, S. (1998). Transitional first-grade referrals: An analysis of school-related factors and children's characteristics. *Journal of Educational Psychology*, 90, 122-133.
- <sup>34</sup> May & Kundert (1995).
- <sup>35</sup> Byrd et al. (1997).
- <sup>36</sup> De Cos (1997). Stipek, D. (2002). At what age should children enter kindergarten? A question for policy makers and parents. *Social Policy Report: Giving Child and Youth Development Knowledge Away*, XVI(2). 3-16.
- <sup>37</sup> Carlton, M. P., & Winsler, A. (1999). School readiness: The need for a paradigm shift. *School Psychology Review*, 28, 338-352. Zill & West (1997).
- <sup>38</sup> Carlton & Winsler (1999). Lin, H.-L., Lawrence, F. R., & Gorrell, J. (2003). Kindergarten teachers' views of children's readiness for school. *Early Childhood Research Quarterly*, 18, 225-237. Meisels (1998).
- <sup>39</sup> Meisels (1998).
- <sup>40</sup> Niemeyer, J., & Scott-Little, C. (2001). *Assessing kindergarten children: A compendium of assessment instruments*. Greensboro, NC: SERVE.
- <sup>41</sup> Saluja et al. (2000).
- <sup>42</sup> Prakash, N., West, J., & Denton, K. (2003). *Schools' use of assessments for kindergarten entrance and placement: 1998-1999*. Washington, DC: National Center for Education Statistics.
- <sup>43</sup> Maxwell, K. L., & Clifford, R. M. (2004). School readiness assessment. *Young Children on the Web* [website]. Available at <http://www.journal.naeyc.org/btj/200401/Maxwell.pdf>. May, D. C., & Kundert, D. K. (1997). School readiness practices and children at-risk: Examining the issues. *Psychology in the Schools*, 34, 73-84. Prakash et al. (2003). Saluja et al. (2000). Shepard, L. A. (1997). Children not ready to learn? The invalidity of school readiness testing. *Psychology in the Schools*, 34, 85-97.
- <sup>44</sup> Meisels, S. J. (1986). Testing four- and five-year olds: Response to Salzer and to Shepard and Smith. *Educational Leadership*, 44(3), 90-92. Shepard, L., Kagan, S. L., & Wurtz, E. (1998). *Principles and recommendations for early childhood assessments*. Washington, DC: National Education Goals Panel.
- <sup>45</sup> Shepard (1997). Shepard, L. A., Taylor, G. A., & Kagan, S. L. (1996). *Trends in early childhood assessment policies and practices*. Boulder, CO: University of Colorado.
- <sup>46</sup> Bordignon, C. M., & Lam, T. C. M. (2004). The early assessment conundrum: Lessons from the past, implications for the future. *Psychology in the Schools*, 41, 737-516. Saluja et al. (2000).
- <sup>47</sup> Bordignon & Lam (2004). Gredler, G. R. (1997). Issues in early childhood screening and assessment. *Psychology in the Schools*, 34, 99-106. Meisels (1998).
- <sup>48</sup> Carlton & Winsler (1999).
- <sup>49</sup> Meta-analysis is a statistical technique used to quantitatively summarize the findings across multiple studies on a particular topic, no matter if their findings are positive or negative.
- <sup>50</sup> La Paro, K. M., & Pianta, R. C. (2000). Predicting children's competence in the early school years: A meta-analytic review. *Review of Educational Research*, 70, 443-484. Note: the correlation between school readiness screenings and children's later academic and cognitive competency was .49, considered to be a moderate effect size. The correlation between these screenings and children's subsequent social competency was .27, considered to be a small effect size. The percentages cited are the result of squaring these effect sizes.

- <sup>51</sup> Augustyniak, K. M., Cook-Cottone, C. P., & Calabrese, N. (2004). The predictive validity of the Phelps Kindergarten Readiness Scale. *Psychology in the Schools*, 41, 509-516. Kurdek, L. A., & Sinclair, R. J. (2001). Predicting reading and mathematics achievement in fourth-grade children from kindergarten readiness scores. *Journal of Educational Psychology*, 93, 451-455.
- <sup>52</sup> Wood, C., Powell, S., & Knight, R. C. (1984). Predicting school readiness: The validity of developmental age. *Journal of Learning Disabilities*, 17, 8-11.
- <sup>53</sup> Pianta, R. C., & McCoy, S. J. (1997). The first day of school: The predictive validity of early school screening. *Journal of Applied Developmental Psychology*, 18, 1-22.
- <sup>54</sup> Boyer, E. L. (1991). *Ready to learn: A mandate for the nation*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- <sup>55</sup> Hains, A. H., Fowler, S. A., Schwartz, I. S., Kottwitz, E., & Rosenhoetter, S. (1989). A comparison of preschool and kindergarten teacher expectations for school readiness. *Early Childhood Research Quarterly*, 4, 75-88.
- <sup>56</sup> Heaviside, S., & Farris, S. (1993). *Public school kindergarten teachers' views on children's readiness for school*. Washington, DC: National Center for Education Statistics.
- <sup>57</sup> Lin et al. (2003).
- <sup>58</sup> Dockett, S., & Perry, B. (2001). Starting school: Effective transitions. *Early Childhood Research & Practice*, 3(2). Available at <http://ecrp.uiuc.edu/v3n2/dockett.html>. Dockett, S., & Perry, B. (2003b). The transition to school: What's important? *Educational Leadership*, 60(7), 30-33. Johnson, L. J., Gallagher, R. J., Cook, M., & Wong, P. (1995). Critical skills for kindergarten: Perceptions from kindergarten teachers. *Journal of Early Intervention*, 19, 315-349.
- <sup>59</sup> Wesley, P. W., & Buysse, V. (2003). Making meaning of school readiness in schools and communities. *Early Childhood Research Quarterly*, 18, 351-375.
- <sup>60</sup> Wright, C., Diener, M., & Kay, S. C. (2000). School readiness of low-income children at risk for school failure. *Journal of Children & Poverty*, 6, 99-117.
- <sup>61</sup> Heaviside & Farris (1993). Piotrkowski et al. (2000).
- <sup>62</sup> Dockett & Perry (2001). Dockett & Perry (2003b).
- <sup>63</sup> Diamond, K. E., Reagan, A. J., & Bandyk, J. E. (2000). Parents' conceptions of kindergarten readiness: Relationships with race, ethnicity, and development. *The Journal of Educational Research*, 94, 93-100.
- <sup>64</sup> Heaviside & Farris (1993). West, J., Germimo-Hausken, E., & Collins, M. (1995). *Readiness for kindergarten: Parent and teacher beliefs (Statistics in brief)*. Washington, DC: National Center for Education Statistics.
- <sup>65</sup> West et al. (1995).
- <sup>66</sup> Piotrkowski et al. (2000).
- <sup>67</sup> Piotrkowski, C. S. (2004). A community-based approach to school readiness in Head Start. In E. Zigler & S. J. Styfco (Eds.), *The Head Start debates* (pp. 129-142). Baltimore: Paul H. Brookes Publishing Co.
- <sup>68</sup> Snow, C. E., & Paez, M. M. (2004). The Head Start classroom as an oral language environment: What should the performance standards be? In E. Zigler & S. J. Styfco (Eds.), *The Head Start debates* (pp. 113-128). Baltimore: Paul H. Brookes Publishing Co.
- <sup>69</sup> Piotrkowski et al. (2000).

- <sup>70</sup> Piotrkowski (2004).
- <sup>71</sup> Altermatt, E. R., Pomerantz, E. M., Ruble, D. N., Frey, K. S., & Greulich, F. K. (2002). Predicting changes in children's self-perceptions of academic competence: A naturalistic examination of evaluative discourse among classmates. *Developmental Psychology*, 38, 903-917. Greibel, W., & Niesel, R. (1999). *From kindergarten to school: A transition for the family*. Paper presented at the 9th European Conference on Quality in Early childhood Education, Helsinki. Greibel, W., & Niesel, R. (2000). *The children's voice in the complex transition into kindergarten and school*. Paper presented at the 10th European Conference on Quality in Early childhood Education, London. Greibel, W., & Niesel, R. (2001). *Transition to school-child: What children tell about school and what they teach us*. Paper presented at the 11th European Conference on Quality in Early childhood Education, Alkmaar, Netherlands. Gullo, D., & Ambrose, R. P. (1987). Perceived competence and social acceptance in kindergarten: Its relationship to academic performance. *Journal of Educational Research*, 81, 28-32. Mantzicopoulos, P. (2004). I am really good at puzzles, but I don't get asked to play with others: Age, gender, and ethnic differences in Head Start children's self-perceptions of competence. *The Journal of Genetic Psychology*, 165, 51-65. Seefeldt, C., Galper, A., & Denton, K. (1997). Head Start children's conceptions of and expectations for their future schooling. *Early Childhood Research Quarterly*, 12, 387-406. Valeski, T. N., & Stipek, D. J. (2001). Young children's feelings about school. *Child Development*, 72, 1198-1213.
- <sup>72</sup> Dockett, S., & Perry, B. (In press). "You need to know how to play safe": Children's experiences of starting school. *Contemporary Issues in Early Childhood*. Dockett, S., & Perry, B. (2002). Who's ready for what? Young children starting school. *Contemporary Issues in Early Childhood*, 3, 67-89. Dockett, S., & Perry, B. (2004). Starting school: Perspectives of Australian children, parents and educators. *Journal of Early Childhood Research*, 2, 171-189. Dockett, S., & Perry, B. (2003a). Children's views and children's voices in starting school. *Australian Journal of Early Childhood*, 28(1), 7-11.
- <sup>73</sup> Graue, M. E. (1993). *Ready for what? Constructing meanings of readiness for kindergarten*. Albany: State University of New York Press.
- <sup>74</sup> Legislative Office of Education Oversight. (1998). *Head Start's impact on school readiness in Ohio: A case study of kindergarten students*. Columbus, OH: Author.
- <sup>75</sup> Piotrkowski et al. (2000), p. 540.
- <sup>76</sup> Gonzalez, R. (2002). *Ready schools: Practices to support the development and educational success of young children*. Los Angeles: UCLA Center for Healthier Children, Families, and Communities. Shore, R. (1998). *Ready schools*. Washington, DC: The National Education Goals Panel.
- <sup>77</sup> Newmann, F. M. and Associates (Eds.) (1996). *Authentic achievement: Restructuring schools for intellectual quality*. San Francisco: Jossey-Bass Publishers.
- <sup>78</sup> Boethel, M. (2004) *Readiness: School, Family & Community Connections*, National Center for Family & Community Connections with Schools, Southwest Educational Development Laboratory.
- <sup>79</sup> Gonzalez (2002). Shore (1998).
- <sup>80</sup> Gonzalez (2002). Shore (1998)
- <sup>81</sup> Early, D. M., Pianta, R. C., Taylor, L. C., & Cox, M. J. (2001). Transition practices: Findings from a national survey of kindergarten teachers. *Early Childhood Education Journal*, 28, 199-206. Emig, C., Moore, A., & Scarupa, H. J. (2001). School readiness: Helping communities get children ready for school and schools ready for children. *Child Trends Research Brief*, October. Washington, DC: Child Trends. Kraft-Sayre, M. E., & Pianta, R. C., (2000). *Enhancing the transition to kindergarten*. Charlottesville, VA: University of Virginia, National Center for Early Development & Learning. National Association for the Education of Young Children. (1995). *School readiness: A position statement of the National Association for the Education of Young Children*. Washington, DC: Author. Sacks, A., & Watnick, B. (2001). Family-school partnership increases school readiness. *Children & Schools*, 23, 188-192. Wesley & Buysse (2003).

- <sup>82</sup> Duran, F., & Wilson, S. (2004). *Keeping children on the path to school success: How is Connecticut doing?* Farmington, CT: Child Health and Development Institute of Connecticut. Available at [http://www.chdi.org/files/Ind\\_book.pdf](http://www.chdi.org/files/Ind_book.pdf).
- <sup>83</sup> Ready for School Goal Team. (2000). *School readiness in North Carolina: Strategies for defining, measuring, and promoting success for all children*. Greensboro, NC: SERVE.
- <sup>84</sup> Murphey, D. A., & Burns, C. E. (2002). Development of a comprehensive community assessment of school readiness. *Early Childhood Research & Practice*, 4(2). Available at <http://ecrp.uiuc.edu/v4n2/murphey.html>
- <sup>85</sup> Currie, J. (2005). Health disparities and gaps in school readiness. *The Future of Children – School Readiness: Closing Racial and Ethnic Gaps*, 15(1), 117-138. Reichman, N. E. (2005). Low birth weight and school readiness. *The Future of Children – School Readiness: Closing Racial and Ethnic Gaps*, 15(1), 91-116. Stipek & Ryan (1997).
- <sup>86</sup> Caughy, M. O. (1996). Health and environmental effects on the academic readiness of school-age children. *Developmental Psychology*, 32, 515-522. Duncan, G. J., & Magnuson, K. A. (2005). Can family socioeconomic resources account for racial and ethnic test score gaps? *The Future of Children – School Readiness: Closing Racial and Ethnic Gaps*, 15(1), 35-54. Hayes, C. (2003). *School readiness: An analysis of biomedical and sociodemographic risk factors*. Gainesville, FL: Maternal Child Health and Education Research and Data Center, University of Florida. West et al. (2000).
- <sup>87</sup> Kohen, D. E., Hertzman, C., & Brooks-Gunn, J. (1998). *Neighborhood influences on children's school readiness*. Hull, Quebec: Applied Research Branch, Strategic Policy, Human Resources Development Canada.
- <sup>88</sup> Perroncel, C. B. (2000). *Getting kids ready for school in rural America*. Charleston, WV: AEL.
- <sup>89</sup> For more information on this program, see <http://www.gettingready.org/matriarch/>.
- <sup>90</sup> Rhode Island KIDS COUNT. (2004). *Preparing Rhode Island's children to succeed in school: Selected school readiness indicators*. Providence, RI: Author.
- <sup>91</sup> State School Readiness Board. (2004). *School readiness action plan: A five year roadmap to ensure children begin 1st grade safe, healthy & ready to succeed by developing a high quality early childhood education system for Arizona*. Phoenix, AZ: Author.
- <sup>92</sup> Duran & Wilson (2004).
- <sup>93</sup> Child Trends. (2003). *First steps and further steps: Early outcomes and lessons learned from South Carolina's school readiness initiative* (1999-2002 program evaluation report, Executive Summary). Washington, DC: Author. Office of First Steps. (2004). *2004 Annual report*. Columbia, SC: Author.
- <sup>94</sup> Rouse, C., Brooks-Gunn, J., & McLanahan, S. (2005). Introducing the issue. *The Future of Children – School Readiness: Closing Racial and Ethnic Gaps*, 15(1), p. 12.
- <sup>95</sup> Gormley, W. T., Gayer, T., Phillips, D., & Dawson, B. (2004). *The effects of universal pre-K on cognitive development*. Washington, DC: Public Policy Institute, Georgetown University. Murphey, D. A. (2003). Discriminant validity of a community-level measure of children's readiness for school. *Early Childhood Research & Practice*, 5(2). Available at <http://ecrp.uiuc.edu/v5n2/murphey.html>. Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., Yazejian, N., Byler, P., Rustici, J., & Zelazo, J. (2000). *The children of the Cost, Quality, and Outcomes Study go to school: Technical report*. Chapel Hill, NC: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center.

- <sup>96</sup> Campbell, F. A., Helms, R., Sparling, J. J., & Ramey, C. T. (1998). Early-childhood programs and success in school. In W. S. Barnett & S. S. Boocock (Eds.), *Early care and education for children in poverty* (pp. 145-166). Albany: State University of New York Press.
- Schweinhart, L. J. (2003). *Benefits, costs, and explanation of the High/Scope Perry Preschool Program*. Paper presented at the Meeting of the Society for Research in Child Development, Tampa, FL.
- <sup>97</sup> Christian, K., Morrison, F. J., & Bryant, F. B. (1998). Predicting kindergarten academic skills: Interactions among child care, maternal education, and family literacy environments. *Early Childhood Research Quarterly*, 13, 501-521.
- <sup>98</sup> Magnuson, K. A., Meyers, M. K., Ruhm, C. J., & Waldfogel, J. (2004). Inequality in preschool education and school readiness. *American Educational Research Journal*, 41, 115-157.
- <sup>99</sup> Abbott-Shim, M., Lambert, R., & McCarty, F. (2003). A comparison of school readiness outcomes for children randomly assigned to a Head Start program and the program's wait list. *Journal of Education for Students Placed at Risk*, 8, 191-214.
- <sup>100</sup> Xiang, Z., Schweinhart, L., Hohmann, C., Smith, C., Storer, E., & Oden, S. (2000). *Points of light: Third year report of the Michigan school readiness evaluation*. Ypsilanti, MI: High/Scope Educational Research Foundation.
- <sup>101</sup> Bowler, M. (March 26, 2003). Fifty-two percent of kindergarteners in Maryland judged 'fully ready'. *Baltimore Sun*.
- <sup>102</sup> Schulman, K., & Barnett, W.S. (2005). *The Benefits of Prekindergarten for Middle-Income Children, NIEER Policy Report*, New Brunswick, NJ: NIEER.
- <sup>103</sup> Espinosa, L. M. (2002). High-quality preschool: Why we need it and what it looks like. *Preschool Policy Matters, 1*. New Brunswick, NJ: NIEER.
- <sup>104</sup> Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental trajectories through second grade. *Child Development*, 72, 1534-1553.
- <sup>105</sup> Magnuson et al. (2004).
- <sup>106</sup> Barnett, W. S., Hustedt, J. T., Robin, K. B., & Schulman, K. L. (2004). *The state of preschool: 2004 State preschool yearbook*. New Brunswick, NJ: NIEER.
- Denton, D. (2001). *Improving children's readiness for school: Preschool programs make a difference, but quality counts!* Atlanta: Southern Regional Education Board.
- <sup>107</sup> Loeb, S., Fuller, B., Kagan, S. L., & Carrol, B. (2004). Child care in poor communities: Early learning effects of type, quality, and stability. *Child Development*, 75, 47-65.
- <sup>108</sup> Maxwell, K., Bryant, D., & Miller-Johnson, S. (1999). *A six-county study of the effects of Smart Start child care on kindergarten entry skills*. Chapel Hill, NC: FPG Child Development Institute.
- <sup>109</sup> Bryant, D., Maxwell, K., Taylor, K., Poe, M., Peisner-Feinberg, E., & Bernier, K. (2003). *Smart Start and preschool child care quality in NC: Change over time and relation to children's readiness*. Chapel Hill, NC: FPG Child Development Institute.
- <sup>110</sup> Byrd et al. (1997). Ellwein, M. C., Walsh, D. J., Eads, G. M., & Miller, A. (1991). Using readiness tests to route kindergarten students: The snarled intersection of psychometrics, policy, and practice. *Educational Evaluation and Policy Analysis*, 13, 159-175. Graue & DiPerna (2000).
- <sup>111</sup> Ackerman, D. J. (in press). Getting teachers from here to there. *Early Childhood Research & Practice*.

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