CHAPTER ONE

The State of Young Children in the United States: School Readiness

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School readiness refers to the set of foundational skills, behaviors, and knowledge children display as they enter school that enable them to achieve academic success in elementary school, graduate from high school, and eventually thrive in the workforce and beyond (La Paro & Pianta, 2000; Pianta, Cox, & Snow, 2007; Zaslow, Tout, Halle, Whittaker, & Lavelle, 2010). Children prepared to adapt to the school environment when they enter kindergarten are more likely to meet academic and social demands of the classroom and succeed in school. Although there is no clear consensus on the exact definition of school readiness, it is generally agreed to include a combination of cognitive, language, executive functioning, socioemotional, behavioral, and health characteristics that cooperate to promote children’s functioning in a school setting (Boivin & Bierman, 2013; Sabol & Pianta, 2012).

In the United States, kindergarten teachers report that children on average are not fully prepared to meet the demands of the classroom environment, particularly in terms of academic skills. In 2010–2011, teachers reported that only 27% of children were proficient in reading and math at school entry based on a nationally representative sample of newly entering kindergarteners (Bernstein, West, Newsham, & Reid, 2014). Moreover, the United States has large disparities in school readiness based on children’s family backgrounds. Children from low-income backgrounds are almost a year behind at school entry.
in terms of their academic and language skills compared to children from higher income families (Denton Flanagan & McPhee, 2009; Halle et al., 2009).

To promote children's school readiness, there is a large and growing movement to invest in high quality education and care of young children before they enter school. The largest share of this investment is spent on early childhood education for 3- and 4-year-old children, which includes the federally funded Head Start program as well as state-funded preschool programs. In particular, there is increasing momentum to expand access to high quality early childhood education programs (Barnett, Votruba-Drzal, Dearing, & Carolan, in this volume). At the federal level, over $6 billion dollars is spent annually for Head Start and states spend approximately $5 billion annually on public pre-kindergarten programs. This collective investment represents an increase of almost $4 billion in early education programs compared to a decade ago (Barnett, Carolan, Squires, & Clarke Brown, 2013; US Department of Health and Human Services, 2014).

The substantial investment in young children will only lead to lasting change if the early childhood interventions target the skills that matter most for children's short- and long-term development (Pianta, Barnett, Burchinal, & Thornburg, 2009). This is predicated on the assumption that the field has a clear definition (and accompanying assessments) of school readiness that serves two critical functions: (a) it consistently predicts children's performance over time; and (b) it accurately highlights children's performance as well as inequalities in children's outcomes. Without a definition and assessment that addresses these two key aims, any early childhood education intervention may only target a portion of the skills that are important for later school success.

The broad aim of this chapter is to describe: (1) school readiness in the United States in the 21st century; (2) the current framework for assessing school readiness and how this may be strengthened; (3) gaps in school readiness based on this framework; and (4) the importance of aligning early childhood interventions and policies to more comprehensive definitions of school readiness. We pay particular attention to ways in which our measurement of and policies targeting school readiness can work together to improve the life chances of children.

**School Readiness in the United States in the 21st Century**

*Definition of school readiness*

Researchers, educators, and policymakers generally agree that school readiness is a multi-dimensional concept that includes cognitive, executive functioning, language, socioemotional, behavioral, and health characteristics that contribute to children's ability to adapt and thrive in school settings (Boivin & Bierman, 2013). These performance domains are correlated but typically are assessed and studied as independent indicators of school readiness and predictors of later achievement. Importantly, the guiding definitions of school readiness typically include skills and behaviors that are related to learning processes as well as learning outcomes, as opposed to the K–12 system, which often only emphasizes student outcomes based on children's performance on academic achievement tests.
In the area of cognition, school readiness includes both acquired knowledge or skills in particular content area (such as knowing a certain number of letters) as well as learning/processing skills or how fast children acquire knowledge. In particular, there has been a growing emphasis on executive functioning skills and how these skills interact with other domains to promote learning in preschool classrooms. Executive functioning typically is defined as the set of skills and behaviors required to attain a goal, including working memory, attention control, attention shifting, and response inhibition. For young children, this means being able to resist distractions (e.g., pay attention to a teacher rather than talk with peers), inhibit dominant responses in emotional contexts (e.g., raise hand instead of talking while the teacher is reading a book), and prioritize and sequence information and hold onto it in memory (e.g., plan and carry out the series of steps required to line up for lunch; Diamond, 2006; Jacob & Parkinson, 2015).

In addition, school readiness includes children’s language skills, including their receptive language (i.e., the ability to listen and understand language) and expressive language (i.e., the ability to communicate with others using verbal language). Children’s socioemotional skills are also an important component of school readiness and include behaviors such as cooperation with teachers and peers and developing social relationships, as well as behavior problems, including aggression or poor regulation. There are also a set of skills referred to as approaches to learning, which reflect children’s curiosity, flexibility, attention, persistence, and engagement. The physical health domain includes motor development, such as development of fine and gross motor skills, and healthy behavior practices. Collectively, all of these skills are theorized to affect children’s learning opportunities and their acquisition of new skills and behaviors in the classroom setting (Diamond, 2006; Jacob & Parkinson, 2015).

Most early childhood education policies recognize the importance of children’s skills across these multiple domains. The Race-to-the-Top Early Learning Challenge, a grant competition that was part of the American Recovery and Reinvestment Act and designed to close the achievement gap, delineated the key components of school readiness that generally align to the field’s multidimensional, comprehensive definition. These “essential domains of school readiness,” based strongly on the framework from the National Education Goals Panel, include language and literacy development, cognition, general knowledge (e.g., early mathematics and early scientific development), and physical well-being, as well as children’s approaches to learning and executive functioning skills, and socioemotional development (Kagan, Moore, & Bradekamp, 1995; US Department of Education, 2014).

Children’s readiness for school in the United States

In the United States, children vary in terms of their readiness for school entry across domains. Results from a nationally representative study of over 8,000 newly entering kindergarten children from most recent cohort of the Early Childhood Longitudinal Study-Kindergarten Class of 2010–2011 (ECLS-K: 2011) indicate that only a quarter of children were deemed “proficient” or ready for school in reading and math based on teacher reports. Although this suggests that the majority of children were not ready for school from
teachers’ perspectives, this percentage has increased over the past 10 years when compared to the same measures from the Early Childhood Longitudinal Study-Kindergarten Class of 1998–1999 (ECLS-K: 1999; Bassok & Latham, 2014). In the ECLS-K: 2011, teachers did report that, compared to reading and math skills, children have higher levels of proficiency in terms of motivation, engagement, and socio-emotional competency at school entry. More specifically, teachers reported that 48% of children had proficient levels of motivation and engagement in school, and 52% of children were proficient in socioemotional and executive functioning skills.

In addition, there are large disparities in achievement at school entry based on family background. In particular, trends from a nationally representative longitudinal study of approximately 14,000 children in the United States (the Early Childhood Longitudinal Study Birth Cohort [ECLS-B]) demonstrate large gaps in achievement between higher income and lower income children. At age 4, children from families in the bottom income quintile performed over a standard deviation behind their peers in the top quintile on literacy and math assessments. In addition, at-risk children (defined by low-maternal education or low-income) performed lower on assessments of learning and processing of information, including working memory and cognitive flexibility, performing .85 and .76 of a standard deviation behind their more advantaged peers (Bernstein et al., 2014). Low-income children also had more behavioral problems, although the gaps were not quite as large (Bradbury, Corak, Waldfogel & Washbrook, 2011).

These income-based achievement gaps in the United States, particularly in terms of cognitive and language skills, are larger than many other OECD countries, such as Australia and Canada (Bradbury et al., 2011). In addition, the income-based achievement gap is now larger than the race-based achievement gap, which in fact narrowed over the same period (Fryer & Leavitt, 2004; Reardon, 2011; Reardon, Robinson-Cimpian, & Weathers, 2014). Currently, at kindergarten entry, the income-based achievement gap (top quartile versus bottom quartile) is almost twice the size of the Black-White achievement gap (1.39 versus 0.73 standard deviation gap; Reardon, 2011).

There are also differences in achievement between first- and second-generation immigrant children and non-immigrant children. Immigrant families have been expanding more rapidly than any other demographic group, representing close to one-fourth of the national population (Hernandez & Napierala, 2012). Although there is an increasing number of children of immigrants who come from middle- or high-income backgrounds with well-educated parents, a significant portion of immigrant children are low-income (Hernandez, Denton, Macartney, & Blanchard, 2012).

Differences in cognitive and language development between low-income children of immigrants versus native families emerge early in life and this gap grows over time. Using the Fragile Families and Child Wellbeing Study, a birth cohort study of over 5,000 children born in large US cities to predominately unwed mothers, Yiu (2011) found that children of immigrants at age 3 were about half of a standard deviation behind on a standardized measure of language compared to children of native families (defined as third generation or greater). Two years later, the gap had doubled, growing to over a standard deviation in language scores.

DeFeyter and Winsler (2009) found a similar pattern in the early language and cognitive skills of immigrant children among a sample of low-income children receiving subsidies to
attend childcare centers in Miami, Florida. However, they also found that children from immigrant families had a number of strengths in terms of their social skills. Preschool-aged children of immigrants (first and second generation) lagged behind their non-immigrant peers in terms of their cognitive and language skills. Yet, children from immigrant families were rated by teachers as demonstrating more initiative, self-control, and fewer behavior problems than children in non-immigrant families.

Current approaches to measuring school readiness

One challenge to characterizing school readiness and identifying disparities in skills is that school readiness is a multidimensional construct. Current approaches to assessing school readiness skills are structured around a framework of readiness-related constructs and the particular methods for measuring them. As a result, the prototypic approaches for measuring school readiness constructs often involve a multi-informant, multi-assessment approach, including a combination of teacher report, parent report, and direct assessment.

For example, the ECLS-K: 2011 included direct assessments, parent reports, and teacher reports across a range of outcomes. Direct assessments were used to assess children’s reading, mathematics, and science skills. Children’s fluid cognition or executive functioning was assessed through physical and computerized tests of cognitive flexibility and working memory. Children’s height and weight were also measured in person during data collection rounds. To complement the direct assessments, teachers evaluated children’s academic performance on language and literacy, science, and mathematical thinking. These rating scales were designed to assess both learning processes and outcomes (whereas the direct assessments were only to assess outcomes). In addition, teachers reported on the quality of teacher-child relationships and teachers and parents also reported on children’s social interactions, attentional focus, self-control, problem behaviors, and approaches to learning.

The ECLS-K: 2011’s measurement approach is common in most other large-scale studies of early childhood development in the United States, such as the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD SECCYD), the Head Start Family and Child Experiences Survey (Head Start FACES), the Fragile Families and Child Wellbeing Study, and the Panel Study of Income Dynamics–Child Development Supplement. In addition, many local and state initiatives that screen and evaluate children’s school readiness assess children across a number of domains (although a few states that require kindergarten assessments at school entry only require measures of literacy performance; Stedron & Berger, 2010). These studies and initiatives contribute to a body of knowledge on a set of well-validated tools that can be used to assess school readiness and have provided important knowledge on the ways in which indicators of performance across multiple domains lead to varying conclusions about rates and nature of school readiness gaps in the US population.

There have been recent efforts to develop relatively simple measures that can provide population-based portraits of kindergarten readiness to inform the design of interventions and policies. The Early Development Instrument (EDI; Janus & Offord, 2007) is perhaps
the best example of this approach. The EDI is a teacher-report questionnaire that focuses on five key areas of school readiness: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge. Teachers complete the EDI for individual children in a class, but the scores are then aggregated to the population of interest, including school, neighborhood, state, or country level. This measure has established validity at the community level and has been used to identify disparities in school readiness based on family background characteristics (Janus, Brinkman, & Duku, 2011).

Recent advances in measurement techniques have led to a set of low-cost, reliable measures of children's skills across a range of multiple domains. For example, the National Institutes of Health Toolbox, developed by experts in neurological and behavioral health measurement, includes a number of short assessments of cognition, emotion, motor function, and sensation explicitly designed for large-scale studies (Weintraub et al., 2013). The measures are all computer-based, relatively quick and easy to administer (approximately 10 minutes each), and can be used from age 3 through late adulthood. These measures present opportunities to assess children's development across a range of domains that are important but often missing from child assessment batteries used at-scale in community or school-based applications.

There have also been advances in using observational tools within early learning settings to assess children's early learning processes. The methods typically involve a trained observer entering the classroom and using standardized procedures for coding children's behavior based on actual demonstration of those behaviors in the context of the classroom setting. Observational tools can be used within early childhood education programs to assess motivation (Berhenke, Miller, Brown, Seifer, & Dickstein, 2011), social behaviors with peers (Bierman et al., 2008), and engagement with teachers, peers, and tasks (Downer, Booren, Lima, Luckner, & Pianta, 2010). These observational tools typically focus less on outcomes (e.g., literacy skills) but rather the ways in which children learn and develop when they are young. This approach to assessment opens up opportunities beyond parent- or teacher-report surveys and direct standardized assessments of children's skills and behaviors, and provides real-time observational data about how children express those skills and behaviors in a given moment. Because children's interactions and engagement with their peers, teachers, and families are a key contributor to their development, observing these interactions provides complementary information to other assessment methods and could lead to new understanding of how children learn and develop (Downer et al., 2010).

For example, a recently developed observational tool, the Individualized Classroom Assessment Scoring System (inCLASS) uses observational methods to measure children's engagement within the classroom setting. Modeling the multiple components of children's engagement with teachers, peers, and tasks simultaneously, researchers found that children's positive engagement with teachers and peers was related to improved language and literacy skills, and that children's negative engagement in the classroom was associated with lower language, literacy, and self-regulatory skills. The findings hold even after controlling for previous performance and classroom quality (Sabol, Bohlmann, & Downer, 2013), suggesting that children's own engagement may play an important role in early skill accrual and preparedness for school.
Relation among current measures of school readiness and long-term development

The interest in measuring and assessing school readiness derives in part from the goal of understanding the developmental roots of later behaviors and skills. Fundamental to the concept of “readiness” is the assumption that these skills, whatever they may be, collectively forecast success and failure over the life course, including graduating from high school, attaining a postsecondary degree, becoming productive adults, and being well-informed, lawful citizens. Longitudinal studies that examine these predictive relations provide an important check on our current conceptualization and measurement of school readiness, particularly as we attempt to strategically align interventions to early skills with strong predictive power.

The “skill beget skill” approach to understanding children’s development suggests that a number of children’s early skills or behaviors are indeed related to later skills or outcomes (Duncan et al., 2007; Fischer, 1980; Flavell, Miller, & Miller, 1985; Heckman & Mosso, 2014; Rogoff, 1990). Feinstein (2003) used the 1970 Birth Cohort Study of over 19,000 children in the United Kingdom and found that children with low achievement in early childhood were particularly at risk for poor adult outcomes. The prediction to adult outcomes was more pronounced at school entry compared to in toddlerhood. Children in the bottom quartile on achievement at 22 months (measured by items such as cube stacking and drawing a straight line) were much less likely to receive advanced degrees compared to children in top quartile of achievement (32% versus 43%). By 5 years old, the difference was almost 10 times greater, with only 18% of children in bottom quartile of achievement at age 5 attaining an advanced degree compared to 58% in the top quartile.

In terms of school performance, Duncan et al. (2007) conducted one of the most comprehensive studies on how children’s reading and math achievement, attention, and behavior predict elementary school achievement using six longitudinal studies of early childhood (e.g. ECLS-K: 1999, NICHD SECCYD). Results indicated that early math, reading, and attention skills were predictive of elementary school achievement, but socio-emotional skills were not. Surprisingly, the effect sizes for early math skills on reading achievement were similar in magnitude to the effect of early reading skills. These findings suggest the importance of early academic and attention skills for success in elementary school.

In an even larger meta-analysis of over 3,500 studies that included over 380,000 students, Hattie (2008) found a similar pattern in which prior achievement was a strong predictor of later achievement (.67). Notably the age range at both time points was considerably larger than in Duncan et al. (2007). Yet, as the author notes, there was still a significant portion of later functioning and performance that was not explained by earlier performance (upwards of 50%). With a smaller sample of studies (n = 234), Hattie found that self-efficacy, self-concept, motivation, persistence, and conscientiousness were highly correlated with achievement, and thus may represent another important element of school readiness that has predictive power. On the other hand, in a meta-analysis on the relation among executive functioning and achievement, Jacob and Parkinson (2015) found that very few studies rigorously control for family background, suggesting that much more work is needed to establish the causal relationship between executive function and long-term achievement outcomes.
Using a child-oriented perspective to characterize school readiness

Fundamentally, “readiness” is a descriptor applied to a child. Clearly we need to better understand how early foundational skills are developed, but there is also a need to understand how skills interact over time to support lifelong success of that child. Importantly, although readiness skills do not exist or operate independently of one another within a particular child or group of children, most research and applications of readiness assessments treat individual skills and behaviors as the central unit of analysis and examine prediction in terms of stability and change, rather than understanding the child as the central unit of analysis (Bergman & Magnuson, 1997; Sabol & Pianta, 2012).

This conceptualization of children’s performance as a discrete set of skills could lead to a number of gaps in our understanding of school readiness. For example, we may know that early mathematical skills predict later mathematical skills, but it does little to explain how a child’s early math skills operate simultaneously with working memory, language, and social skills to foster development over time. A child-oriented approach could help elucidate how specific skills work together to shape development over time. This approach has implications for understanding the systemic nature of development by capturing the nonlinear combinations of early skills within children and how these patterns predict later achievement.

Several studies have used cluster-based profiles of children to characterize school readiness (Cooper et al., 2014; Hair, Hall, Terry-Humen, Lavelle, & Calkins, 2006; Konold & Pianta, 2005; McWayne & Bulotsky-Shearer, 2013, Quirk, Nylund-Gibson, & Furlong, 2013). For example, McWayne, Cheung, Wright, & Hahs-Vaughn (2012) used the Head Start FACES 2000 to examine patterns of school readiness for low-income children attending Head Start and how they related to children’s demographic characteristics. Latent classifications revealed three profiles based on teacher report and direct assessment of children’s cognitive skills, behavior problems, and cooperative classroom behaviors. The first profile, high average social and academic skills, was marked by high ratings and performance across social and cognitive domains. Children in this profile were more likely to be older, White, and girls. The second profile was characterized by high behavior problems and low to low-average scores across cognitive measures, with children that were younger, disabled, Black or Latino, and boys. The third profile was distinguished by average performance across all domains, with children who were more likely to be English language learners, girls, and Black or Latino. Results suggest that patterns of school readiness map onto certain demographic subgroups.

Quirk and colleagues (2013) took a similar analytic approach, but focused on social-emotional, physical, and cognitive domains among a sample of almost 800 Latino kindergartens in California. Using teacher report of kindergarten readiness across 16 measures, they identified five profiles through latent class analysis. Three profiles were characterized by high, average, or low performance across all domains. There were also two profiles that were distinguished by a combination of high, average, and low social, cognitive, and physical skills: (1) moderate social-emotional, low cognitive, and average physical skills; and (2) low social-emotional, moderate-low cognitive. These two profiles and the low performance across all domains profile had lower academic performance in 2nd grade compared to the higher performing school readiness profiles.
The ultimate strength of child-level school readiness profiles may be in forecasting later achievement. The profiles allow researchers to measure school readiness as a multifaceted construct for a given child, with peaks and dips across different domains within individuals, and then examine within- and cross-domain associations over time. Konold & Pianta (2005) used the NICHD SECCYD to identify six profiles of functioning in typically developing 54-month-old children using an assessment battery that consisted of measures of executive functioning (both working memory and attention) and social functioning. Children were classified into six groups reflecting various peaks and valleys of relative performance, such as (a) attention problems, average social functioning, and average working memory, (b) high social competence and average working memory, and (c) high working memory and mild externalizing problems.

Sabol & Pianta (2012) then used these same school readiness profiles to forecast achievement in 5th grade. Of note were the cross-domain associations that a traditional variable-oriented approach may have missed. For example, a group of preschool-aged children with low attention, but without socioemotional problems, had strong social skills and academic performance in 5th grade in comparison to more traditional profiles that had low skills in all areas. In addition, patterns in which high social competence or high working memory were prominent, predicted high 5th-grade achievement. Results indicate that profiles that capture cross-domain interactions in performance may be particularly well suited to identifying multiple pathways to later performance and socioemotional skills.

In addition, several studies have examined associations among domains of functioning and how child-level school readiness profiles may predict later performance using a nationally representative sample (Cooper et al., 2013; Hair et al., 2006; Halle, Hair, Burchinal, Anderson, & Zaslow, 2012). Duncan and Magnuson (2011) used the ECLS-K: 1999 and examined the basic correlations among reading, math, attention, externalizing and internalizing behavior problems at the start of kindergarten. Not surprisingly, the highest correlation was between reading and math skills (.69). Yet, higher performing students were as likely to exhibit behavior problems as children who were low-performing. Children’s attention skills were also highly correlated with higher performance (.29–.41) and lower behavior problems (.36–.51). By 5th grade the correlations all grew in magnitude, suggesting that students’ academic and social skills become more connected over time.

Hair and colleagues (2006) took a person-oriented approach to examining school readiness in a nationally representative study (ECLS-K: 1999). They used five dimensions of school readiness that align to the National Education Goals Panel and Race-to-the-Top Early Learning Challenge “essential domains of school readiness”, – physical well-being, social-emotional development, language, cognition, and approaches to learning. Cluster analysis discriminated four profiles at kindergarten entry: positive development (above average performance on health, social-emotional, language, and cognition; 30%), social/emotional and health strengths (with low-moderate language and cognitive skills; 34%), social/emotional risk (with below average health, social-emotional, and cognitive skills; 13%), and health risk (with low language and cognitive skills and above average social-emotional skills; 22.5%). Children from the risk profiles were more likely to come from economically or socially disadvantaged families.
By 1st grade, children with positive development had the highest academic performance and highest rated social skills. Children with high social skills and average cognitive skills also performed well. Interestingly, children with health risk profile had low academic performance in elementary school. Similar to Sabol & Pianta (2012), this study identifies alternative pathways to positive outcomes, particularly for children characterized with high cognitive skills or high social skills in early childhood. These results also suggest the importance of measuring health outcomes in early childhood as well, which may place children at-risk for later academic development.

Halle et al. (2012) then examined the long-term associations between school readiness profiles and academic achievement and socioemotional skills achievement in elementary school and middle school using the ECLS-K: 1999. They used similar measures to Hair et al. (2006) and uncovered four empirically validated school readiness profiles that were distinguished by high, above average, average, or low performance on all school readiness domains. None of the profiles were characterized by high performance on some school readiness domains and low on others. Latent growth analysis indicated that children in the highest performing school readiness profile continued to outperform children in other profiles. However, children in the bottom profiles demonstrated greater improvement over time and had more rapid growth from 1st through 8th grade. These findings may be somewhat limited by measurement concerns in terms of capturing growth over time, but do demonstrate that children arrive at school with different patterns of school readiness competencies.

It is hard to draw comparisons across the studies of school readiness that use a person-oriented approach given the variation in measures included and the population studied. However, results suggest that person-oriented approaches may elucidate patterns of school readiness that would not be identified in traditional variable-oriented approaches. Moreover, results suggest that children's performance in elementary school and middle school can be predicted by children's patterns of school readiness, again confirming the importance of early skills for later development and outcomes.

The importance capturing children's skills across multiple dimensions has significant implications for how we define and measure gaps across a diverse range of children. Typical approaches to identifying achievement gaps typically do not measure children's skills across multiple domains simultaneously and instead focus on a set of early skills, such as achievement tests, that may only tell part of the story in terms of forecasting long-term outcomes. Thus, there is the potential that we are missing important strengths and weaknesses in children's early skills and behaviors from a diverse range of outcomes. Future work may attempt to characterize children's school readiness gaps using a more parsimonious, holistic approach. In addition, school readiness profiles need to be replicated across multiple datasets that represent the range of children's skills and backgrounds, in order to determine the utility and validity of this approach.

### Measuring School Readiness in a Policy Context

Defining and measuring school readiness is challenging. Yet, the increased emphasis on school readiness within policy contexts highlights the critical need of getting the definition “right” particularly when public preschool for low-income children is promoted as a...
gap-closing investment and when school districts are considering widespread implementation of kindergarten assessments. In the coming years, it will become even more important to expand the conceptualization and strengthen the measurement to include the components of children's early skills and functioning that accurately depict disparities as well as forecasting later performance. As local, state, and federal policies attempt to mitigate disparities through various policies and programs, measures of children's school readiness may be increasingly used as benchmark of the success of those policies.

The K–12 system provides an example of how policy can lead to a reductionist view of student achievement and development, but can also spur action. The No Child Left Behind legislation mandated the improvement of student achievement as measured through test score gains. All states were required to develop state tests to be used in annual testing, focused primarily on 3rd through 8th grade student performance. The emphasis on student achievement tests led to a somewhat myopic focus from schools on improving the skills that directly related to student test scores and less of a focus on other subjects or skills that may promote later outcomes. On the other hand, it provided a common metric and language to track and monitor student progress and also provided an opportunity to examine the schools that have lower or higher achievement.

The focus on student achievement has trickled down to kindergartners. In the Race-to-the-Top Early Learning Challenge (RTT-ELC), states were judged on the basis of whether they collected data on school readiness at kindergarten entry. The RTT-ELC delineated that the kindergarten assessment tool should cover all of the essential domains of school readiness. The goal of the kindergarten assessments was to help states understand the status of children's learning at kindergarten entry, how early learning programs such as state-funded pre-kindergarten programs may be improved to strengthen children's early skills, and plan for how best to serve children in the K–12 system (Scott-Little, Bruner, Schultz & Maxwell, 2013). As a result of this funding, more states than ever use kindergarten assessment tools. In 2010, 25 states had established a kindergarten entry assessment and 21 required universal assessment of kindergarten students (Stedron & Berger, 2010).

Thus far, school readiness assessments have been used primarily for descriptive purposes and have only played a small to moderate role in higher stakes contexts, such as states' preschool accountability systems (separate from NCLB), Quality Rating and Improvement Systems (QRIS), but that may change in the near future. To date, QRIS have primarily focused on measuring classroom level inputs, such as the global classroom environment and class size, to rate preschool quality across states. However, children's performance is increasingly being integrated into preschool ratings. For example, in 2010 only 11 states (out of 25; 44%) used child assessments as a way to determine preschool program quality. By 2014, that number had almost doubled to 21 states (out of 38 states; 55%), suggesting that states are moving in the direction of using school readiness as one indicator of program quality (QRIS Compendium, 2014).

School readiness may also increasingly be used in even more high stakes settings. For example, in Chicago, the Mayor recently proposed funding pre-kindergarten programs using $17 million in social-impact bonds. Lenders will only be repaid if students demonstrate an increase in school readiness for kindergarten, among other outcomes, such as lowering the need for special-education programs. Children’s school readiness will be used to determine in part how much money the city pays for pre-kindergarten and whether private lenders reclaim their investment. This approach has been used in Utah as well,
and could represent the growing interest in using school readiness as a marker of the effectiveness of early childhood education programs.

Future work focused on strong, consistent measurement will help to build conceptual clarity and provide a common language that can be used by researchers, teachers, parents, and the general public to track children’s progress. There are a number of efforts underway to address this goal, such as the application of the Early Development Instrument (EDI; a population-based school readiness measurement tool), creating a common kindergarten entry assessment, and accompanying K-3 formative assessments. In addition, researchers and educators are currently developing common early learning and development standards from birth to kindergarten entry that are aligned to the Common Core State Standards.

Conceptual clarity on school readiness is predicated on the development of measurement tools that are culturally relevant for children from diverse backgrounds that capture the nonlinear relationships of multiple domains of functioning. Recent advances in measurement provide opportunities to incorporate easy-to-use tools across multiple domains, which is exemplified in the ECLS-K: 2011. However, much more work needs to be done to examine the predictive validity of individual measures, as well as how patterns of school readiness across multiple domains are associated with longer term outcomes.

Overall, policy should drive better assessment. For instance, if programs do not assess how kids are performing in math, it is challenging to know how to align programming to those skills. Improved assessment of school readiness can also highlight strengths in children’s early skills, as well as disparities. This in turn can inform program evaluation and planning, as well as mobilize communities around the needs of their children.

When children enter kindergarten, the whole child enters, not just individual behaviors and skills. The field has made impressive gains around characterizing and measuring children’s development across multiple domains and how these skills operate in concert over time to produce learning gains in the short term. Further work may examine the long-term predictive validity of this child-oriented approach and how policies and programs can target these skills to support the lifelong success of children.

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