UNIVERSITY OF
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Defining, Understanding, Assessing, and Evaluating School Readiness in South Carolina

Commissioned by

South Carolina Early Childhood Advisory Council

South Carolina First Steps to School Readiness

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Introduction

According to recent estimates, one in seven children is not prepared for kindergarten entry in South Carolina (South Carolina First Steps, 2006). Children who enter kindergarten behind their peers often struggle in kindergarten and later grades. In an extensive review of 17 meta-analyses, which included 3,607 studies, John Hattie (2009) explored the impact of prior achievement on academic success. The results demonstrate that children's prior achievement, even in preschool or early childhood education settings, is significantly related to their achievement in early elementary school and beyond.

To better understand and assess the school readiness of young children in South Carolina, South Carolina First Steps to School Readiness (hereafter referred to as First Steps) and the South Carolina Early Childhood Advisory Council (hereafter referred to as ECAC) contracted with the University of South Carolina and Clemson University to systematically explore: 1) the landscape of early childhood education professional development and 2) current practices to define and encourage school readiness. Within this project, Clemson University's faculty and staff focused on understanding professional development and training needs within early childhood education. The University of South Carolina's (USC) faculty and staff concentrated on understanding: stakeholders' perceptions of school readiness; how other states address school readiness issues; and potential methods to measure school readiness.

School readiness is best understood by examining environmental factors in children's lives, while also assessing specific skills, abilities, and dispositions at school entry. Policy makers, researchers, evaluators, and practitioners use data related to these sources to identify factors that may be modified or enhanced prior to school entry and to plan effective instruction. Data related to environmental influences are often collected through a variety of entities and organizations. These data are catalogued into a central data repository, so future analyses can provide evidence to guide policy decisions.

In the 1970s, South Carolina began formally assessing the school readiness of students in kindergarten and first grade. From 1979 until 2001, the Cognitive Skills Assessment Battery (CSAB) was administered to first graders across the state. The CSAB was an untimed

assessment used to measure skill levels in several key areas linked to school readiness. In 2001, the South Carolina Readiness Assessment (SCRA) replaced the CSAB. The SCRA was a performance assessment for kindergarten and first grade students that included 14 indicators in three critical areas: 1) English/language arts, 2) mathematics, and 3) personal and social development. Teachers rated student progress at least twice per year through the SCRA. Both assessments provided schools, school districts, and state policy makers with information about the percentage of students deemed "ready" or "not ready" for school (SC Department of Education, 2002; SC Department of Education, 2003). Recently, the SCRA was discontinued; therefore, a state-level school readiness assessment is not required at this time.

In 2006, a workgroup commissioned by First Steps explored the development of a School Readiness Index. The proposed index concept reflected the multiple child, school, and community influences that are often associated with children's school readiness. While this work provided important information for the state about factors that influence school readiness, an index was not established to inform school readiness efforts or monitor progress of children.

The current work, which began in November of 2011, builds on previous work whenever possible. We used a collaborative consultation process to seek information from multiple stakeholders at the state and community levels. This included work in two geographic areas of South Carolina, Greenville County and Barnwell County (e.g., meetings, discussions, focus groups), and surveys of district-level early childhood coordinators across the state. In addition, we collected information from key personnel in several other states about their school readiness practices. We also performed substantial literature reviews to gather information about research-informed strategies related to school readiness. Four predominant themes emerged from this process, and these themes provide the organizational structure for this report and its recommendations. The four themes are:

1) defining school readiness,
2) understanding influences on school readiness,
3) assessing child-level school readiness, and
4) evaluating South Carolina school readiness.

In each section, recommendations and key strategies are highlighted.

Methods

At the onset of the project, USC faculty and staff conducted an extensive literature review to understand common definitions of school readiness and factors that influence school readiness. Information was gathered from journals and other reputable publications, as well as, previous work conducted by First Steps and community stakeholders.

To further expand the knowledge base, we researched relevant school readiness assessments used across the country. In this process, we interviewed school readiness experts in other states, including California, Delaware, Florida, Maryland, Minnesota, North Carolina, and Washington, to learn about assessments they use to measure school readiness. Several of these states received Race to the Top-Early Learning Challenge (RTT-ELC) funds and are in the process of selecting or refining methods to assess school readiness at kindergarten entry.

Next, in collaboration with First Steps and the South Carolina Department of Education, we developed and implemented a survey for early childhood coordinators in each district within South Carolina. We used this survey to identify common assessment practices for each grade level from pre-kindergarten through second grade. We also requested information about the process of administering the assessments and the overall purpose of the assessments. Many districts assess children in pre-kindergarten through Grade 3 and there are some commonly used assessments; however, there are differences in the purposes and administration of these assessments.

Information garnered from the early childhood coordinator survey, as well as from other states, was used to explore high-quality assessments that could be recommended for statewide use. We concentrated on assessments that are used often in South Carolina or other states: 1) AIMSweb, 2) BRIGANCE Early Childhood, 3) Developmental Indicators for the Assessment of Learning, 4) Early Development Instrument, 5) Measures of Academic Progress, and 6) Teaching Strategies GOLD.

Throughout the process, University of South Carolina project personnel included multiple stakeholders in early childhood education from across the state. We collaborated with individuals from Clemson University, South Carolina First Steps, Greenville First Steps, Greenville United Way, Institute for Child Success, Barnwell First Steps, South Carolina Office of Research and Statistics, South Carolina Department of Education, South Carolina Early

Childhood Advisory Council, University of North Carolina at Charlotte, and other school district and community representatives. Over the past year, these stakeholders attended meetings and presentations with the project personnel and participated in the process exploring South Carolina school readiness practices. We also conducted focus groups with community leaders in Greenville and Barnwell Counties during the summer of 2012 to gather their feedback about community perspectives of school readiness, facilitators and barriers to school readiness, and current practices related to school readiness. In addition, we engaged in school visits and observations at Greenville and Barnwell elementary schools.

Defining School Readiness

Currently, South Carolina does not have a standard definition of school readiness to guide the efforts of early childhood leaders in communities, school districts, and counties across the state; however, some organizations or initiatives in South Carolina have developed definitions or mission statements to guide their work. For example, leaders of the Greenville Readiness Initiative have defined school readiness as:

> "the state of early development that enables an individual child to engage in and fully benefit from kindergarten learning experiences, which provide the foundation for sustained school success. To achieve school readiness, three elements provide a necessary interplay in the positive trajectory of supporting and nurturing a child's development—Ready Families, Ready Early Care and Education, and Ready Communities."

Similarly, personnel in the Virginia Department of Education have also defined school readiness in relation to a systems model, acknowledging the relationship between the children and their families, schools, and communities. Another common framework involves using domains or indicators to measure school readiness. For example, the definition from the personnel in the Minnesota Department of Education noted:

> "'School readiness' is defined as the skills, knowledge, behaviors and accomplishments that children know and can do as they enter kindergarten in the following areas of child development: social and emotional development; approaches to learning; language and literacy development; creativity and the arts; cognition and general knowledge; and physical well being and motor development."

This definition outlines school readiness in terms of the domains used to measure it. Many others, such as the Maryland State Department of Education and the Frank Porter Graham Child Development Center at the University of North Carolina at Chapel Hill, frame the definition according to the developmental domains they measure.

Recommendation 1

Develop a measurable definition of school readiness that includes specific domains of development to be used to guide early childhood assessment and instruction.

Developing a definition of school readiness is a challenging task for stakeholders in South Carolina because there are differing perspectives about the concept. Nevertheless, without a clear and concise statewide definition, individuals who are involved in initiatives, programs, and services often develop their own definitions, which may or may not be aligned with research, best practices, and statewide efforts to implement effective early childhood education services. Hence, confusion and divergent understandings related to the definition of school readiness often undermine efforts to enhance school readiness.

Strategy 1.1

Convene a Task Force of key stakeholders to inform the school readiness definition. Stakeholders should include well-informed representatives from a variety of organizations.

Identifying Domains of School Readiness

The domains of school readiness typically identified within the field of early childhood (e.g., pre-kindergarten programs, Head Start programs, early intervention services, childcare programs), often include as many as five to ten developmental areas. Although some states have additional domains, the most widely recognized domains include: physical development, social-emotional development, language and literacy, mathematical thinking, and cognitive development. For example, Maryland's State Department of Education measures personal and social development, language and literacy, mathematical thinking, scientific thinking, social studies, arts, and physical development. Many states and early childhood education organizations focus on five or more domains of child development; however, research that

validates additional domains beyond mathematical thinking, pre-literacy/literacy, and social-emotional development is limited.

Strategy 1.2

Identify key domains related to school readiness and later school success. Limit initial focus to those domains most associated with school readiness by researchers and practitioners.

Using a focused number of critical domains has been a strategy used by other national initiatives such as the Common Core State Standards Initiative. This type of concentration may allow for the most effective use of curricular assessments and professional development resources related to essential domains for school readiness and achievement. Focusing on key domains is not meant to diminish the importance of other domains, but to promote stakeholders' efforts on manageable and meaningful goals and expectations.

Domains cited through literature and focus groups with key stakeholders as most significantly related to school readiness and later school achievement are: 1) literacy development, 2) mathematical thinking, 3) social-emotional development, and 4) health and physical development. La Paro and Pianta (2000) conducted a review of 70 published studies, and they determined that academic and cognitive outcomes, such as language development and related skills, literacy, numeracy, and perceptual-motor skills, were stronger predictors of future school success (r = 0.49) than social or behavioral measures (r = 0.27). Another review by Duncan et al. (2007) using six longitudinal data sets linked mathematical skills most highly with future school success (r = 0.33). In focus groups, community leaders frequently cited social-emotional and health domains of school readiness as highly important. They believe that a child needs to be in good health and have established social-emotional skills as the foundation to begin to learn other important skills.

Strategy 1.3

Disseminate definition of school readiness widely and promote shared understanding and use of the definition.

Once developed, it is important that the definition of school readiness be widely disseminated across the state to ensure common interpretation of the definition and encourage clear communication across disciplines and service sectors (e.g., childcare services, 4-year-old pre-kindergartens, Head Start programs, faith-based preschools). Moreover, development of effective policies and practices related to defining and assessing school readiness among young children with subsequent feasible evaluation is sorely needed.

Understanding Influences on School Readiness

Many factors shape children's school readiness and later school success. The presence or absence of these influences during children's early years can greatly affect their school readiness. While these factors do not guarantee or preclude school readiness, they have been linked to academic achievement; therefore, it is important to define and discuss these elements within the context of school readiness.

Environmental Influences on School Readiness

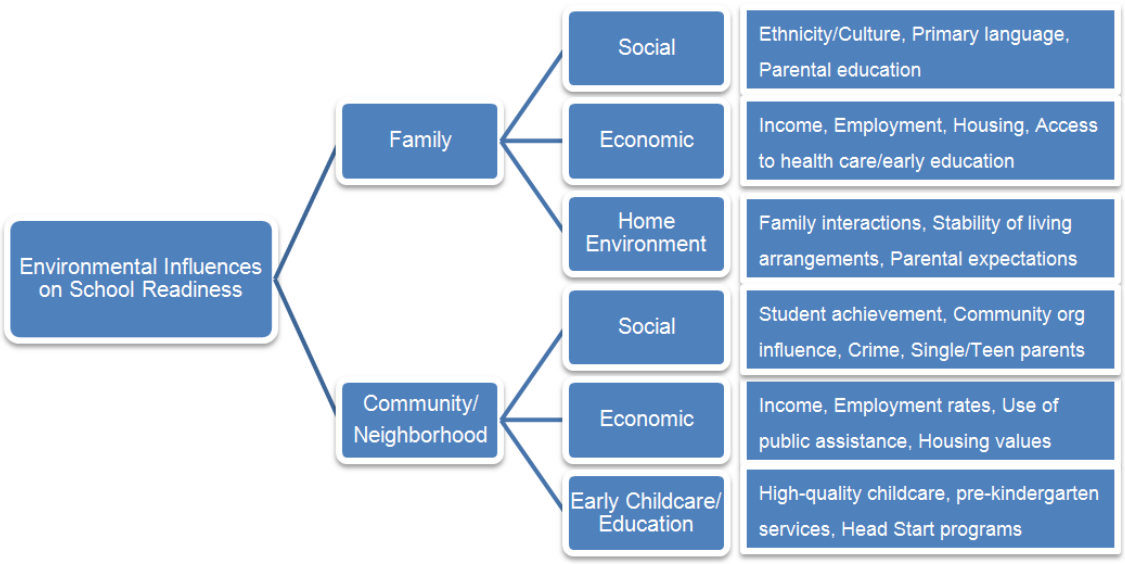
Environmental influences are the circumstances in children's lives that may affect their readiness for school both positively and negatively (e.g., income, health services, schools, childcare services). Through a literature review, work with the ECAC Data Leaders Consortium, and discussion with school readiness leaders, we broadly identified the most influential environmental factors as: 1) the family and 2) the community or neighborhood.

Within the family domain, several additional aspects that influence school readiness are: 1) social elements such as family's ethnicity or culture, primary language, and parental education level; 2) economic factors including income, employment, housing, and access and use of health care and early childhood education; and 3) home environments such as family interactions, stability of living arrangements, and parental expectations for and involvement in the children's development and education (Duncan et al., 2007; Hattie, 2009; La Paro & Pianta, 2000; Linder, 2011).

Within the community and neighborhood realm, the three organizing aspects that influence school readiness are: 1) social factors such as student achievement early in their education, presence and influence of religious and other community organizations, presence of single or teen parents, and property and violent crime rates; 2) economic elements including income, use

of public assistance, employment rates, and housing values; and 3) access and use of high-quality child care and early education.

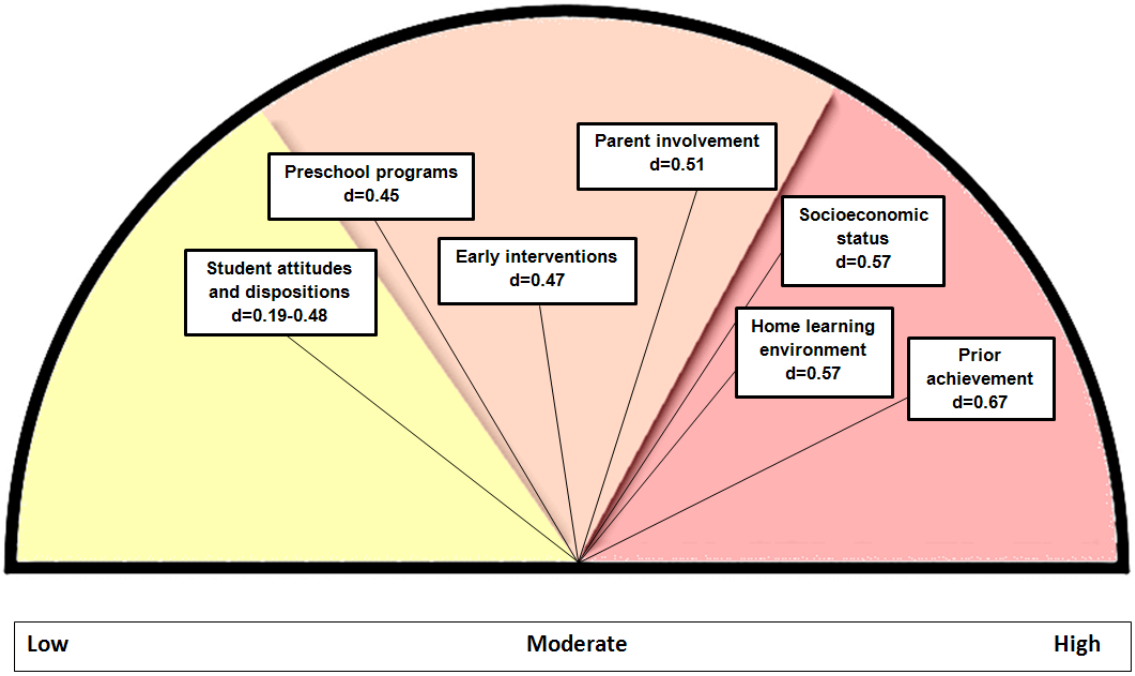
Figure 1. Environmental Influences on School Readiness



According to John Hattie, author of *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement* (2009), and a review of other well-known meta-analyses, the most powerful influences on school readiness are socioeconomic status, home learning environment, and parental involvement (for other reviews see Duncan et al., 2007; La Paro & Pianta, 2000; Linder, 2011). Prior achievement and attendance in high-quality preschool programs are also closely linked with student learning outcomes in kindergarten. Individual child factors, such as gender, ethnicity, and social-emotional dispositions, can influence their capacity for school readiness, but the associations are not as strong as prior achievement and high-quality preschool services (Duncan et al., 2007; Hattie, 2009; La Paro & Pianta, 2000; Linder, 2011).

These findings were formatted into the barometer image shown in Figure 2. The barometer is a visual representation of how strongly the factors are related to school readiness, based on Hattie's reviews of meta-analyses (2009) that relate most to school readiness and early school success. The individual influences are shown by the relative magnitude of influence (i.e., effect sizes), and are categorized into low (d = 0 - 0.3), moderate (d = 0.4 - 0.6), and high (d = 0.7 - 1.0) effects categories. As noted earlier, children's prior achievement, which may be affected by high-quality early childhood services and supports, has the strongest relationship to school readiness.

Figure 2. Barometer of Factors that Influence School Readiness



* Barometer concept adapted from Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge.

The focus groups conducted with school readiness leaders reaffirmed the findings from our literature review. When asked about the factors they believe facilitate school readiness, community leaders most frequently cited parental involvement and the importance of a positive home learning environment. Other factors related to the home environment, such as feeling safe, having basic needs met, and maintaining access to healthcare, were also mentioned. A third prominent influence noted was availability and access to high-quality childcare.

Measuring Environmental Influences on School Readiness

In addition to exploring child-level assessments, we also investigated methods to assess environmental influences on school readiness. Currently, some sources of state- and county-level school readiness data are available through the South Carolina Office of Research and Statistics (ORS) and other agencies. Most notably, ORS provides data for the Annie E. Casey Foundation's annual report through the Kids Count Data Center, by state, county, and congressional district. Data provided through this resource are extensive and the information includes demographic characteristics as well as other measures such as education, economic well-being, family and community, health and safety and risky behaviors (Annie E. Casey

Foundation, 2012). This is one of the largest and most extensive repositories of educational, social, medical, and child well-being data. Nevertheless, the use of data available through ORS requires developing interagency agreements, sharing non-identifiable information, and negotiating costs associated with obtaining the data.

Additionally, several programs and studies have been established recently that may serve as models for measuring and assessing school readiness at the community level. The Greenville Readiness Initiative, which includes partners from the United Way of Greenville County, Greenville County First Steps, and the Institute for Child Success, developed the Readiness Roadmap. This program outlines objectives, strategies, and targets for developing Ready Families, Ready Early Care and Education, and Ready Communities. The goals in this initiative are designed to support parents in their role as their children's teachers, to have the highest quality early care and education system in the Southeast, and to include many high-needs communities in supporting school readiness. Each goal has a set of outcomes that allow for progress toward these goals to be tracked. The University of North Carolina at Charlotte is also working with the Institute of Child Success and stakeholders in Greenville County on community-level measures of school readiness that can be used to better understand school readiness in Greenville; those measures may be especially relevant to other communities and counties in South Carolina.

The Neighborhood Quality of Life Study, conducted by research faculty at the University of North Carolina at Charlotte, is another current regional study that measures 20 variables related to the health and wellbeing of citizens in 173 areas of Charlotte. These variables measure the social, criminal, physical, and economic conditions of each area. Examples of variables are: average kindergarten scores, percent of children achieving at or above grade level, percent of births to adolescents, youth opportunity index, appearance index, and juvenile crime rate. The researchers implementing the study captured a comprehensive picture of Charlotte's well-being, and its methods could be applied to measuring community or environmental influences on school readiness in South Carolina.

Another contemporary program based on community-level data, the Promise Neighborhood Initiative, modeled after the Harlem Children's Zone, aims to improve the health, social, community, and educational support for children in communities with extremely limited resources and significant barriers to education attainment. Resources are available through the

Promise Neighborhood Research Consortium to gauge neighborhood well-being and functioning. The "Neighborhood Checkup" involves conducting surveys of residents and organizations to better understand strengths and areas of improvement within designated areas.

Recommendation 2

Explore availability of and common format for community level data to be used by stakeholders in planning, developing, enhancing, and evaluating school readiness efforts.

Assessing School Readiness

Assessing school readiness can occur at different points in children's lives. Some screenings and assessments are designed for use in the earliest years of life; whereas, others specifically measure knowledge, skills, and abilities of preschool and kindergarten children. Other assessments were created primarily for identifying potential developmental delays, and others are used to plan and deliver instruction. The purposes and timeframes of screenings and assessments are important to obtain an accurate measure of school readiness for young children across time. Generally, young children are the most difficult population to assess because researchers encounter measurement problems related to reliability and validity. In addition, because children are served in multiple sectors of childcare and early childhood education, (e.g., childcare services, 4-year-old pre-kindergartens, Head Start programs, faith-based preschools) assessment practices vary widely and are often very limited or nonexistent.

Purposes of Assessment

Assessing children's knowledge, skills, and abilities is critical because it informs instruction and establishes a framework for intentional teaching with regard to essential child dispositions and skills. In addition, assessments can be used to better understand influences of prior experiences and educational services in an effort to promote effective strategies sooner rather than later (e.g., preschool screening and assessment, kindergarten screening and assessment). While assessments are often used for multiple purposes, it is important to highlight the four major functions of assessments to ensure that they are used in an effective and appropriate manner. These four functions are: 1) screening, 2) program planning, 3) progress monitoring, and 4) program evaluation.

- Screening tools may be used to identify children who need further evaluation or to determine the proportion of children within a given population who meet well-specified

developmental or health benchmarks (e.g., school readiness, presence of a developmental delay, dental problems).

- Program planning assessments are based on systematic gathering of information to better arrange and implement effective educational services; these assessments are especially important for many young children who live in poverty or for those who have developmental delays.
- Progress monitoring is related to children's acquisition and fluent use of newly acquired skills and dispositions in common real world contexts; teachers should monitor children's progress toward team developed objectives, benchmarks, goals, or standards at several strategic points throughout the year (e.g., fall, mid-year, spring) and across years.
- Program evaluation measures provide teachers and administrators with information to assess programmatic goals or identify the need to implement additional teaching strategies and other services to continually improve their early childhood education programs for children and their families.

As stakeholders in South Carolina consider various measures to assess school readiness, the purposes of the assessments must be clearly established to select suitable measures and gather the appropriate information for evidence-based decisions.

Child-Level School Readiness Assessments

High-quality child-level school readiness assessments generally include the following characteristics: 1) aligned to school readiness domains (valid), 2) reliable when re-administered to children, 3) age appropriate for the children assessed, and 4) feasible for practitioners to implement and analyze. Based on the results from the early childhood coordinators survey, discussions with other states, and literature reviews, we explored several standardized child-level school readiness measures that meet these characteristics: 1) AIMSweb, 2) BRIGANCE Early Childhood assessments, 3) Developmental Indicators for the Assessment of Learning, 4) Early Development Instrument, 5) Measures of Academic Progress for Primary Grades, and 6) Teaching Strategies GOLD. For each, we interviewed the distributors and reviewed the assessments' existing psychometric information. Basic information about each is delineated below.

AIMSweb can be used for screening, progress monitoring, and program evaluation in kindergarten through eighth grade. This assessment includes a battery of short paper-pencil or

oral measures for reading, language arts, and math that are administered to the students and scored by the teacher. The instructor then enters the scores into an online database that generates reports about student needs. There is an additional behavior monitoring system that can be used separately. AIMSweb reports that its assessments are aligned with the Common Core Standards. AIMSweb has been adopted and used extensively in Greenville County Schools to both identify and serve kindergarten-age children who need small group instruction in literacy skills. It is also used as their progress monitoring measure to inform small group instruction.

The BRIGANCE Early Childhood Complete Assessment and BRIGANCE Early Childhood Developmental Inventory are used to assess 1) language development, 2) literacy, 3) math and science, 4) social and emotional development, 5) physical health and development, and 6) approaches to learning in children from birth to 5 and birth to 7, respectively. The BRIGANCE measures are administered in a direct assessment format by teachers to children individually as an initial assessment and for progress monitoring.

The Developmental Indicators for the Assessment of Learning (DIAL) is a screener used to assess motor skills, concepts, language, self-help, and social development of 3- to 6-year-olds. Teachers, or other familiar adults, complete the DIAL with children individually in a direct assessment format. The DIAL is useful for providing information about children's developmental level compared to other children in the same age range. Since the DIAL is designed as a screener, it should be used to identify children in need of further assessment or preschool services. Presently, the DIAL is the most common measure used by school district personnel in South Carolina in 4-year-old pre-kindergarten programs.

The Early Development Instrument (EDI) is a population-based screener used to measure five broad domains in 4- to 5-year-olds: 1) physical health and well-being, 2) social competence, 3) emotional maturity, 4) language and cognitive development, and 5) communication skills and general knowledge. The EDI is a checklist of skills and abilities related to school success, which can be administered using paper or online versions. Teachers complete this information by rating all children in their classroom individually. The EDI is designed to provide information about strengths and areas for improvement for groups of young children (e.g., school level, neighborhood level, county level). Although it is beginning to be used in California and other locales and states, to our knowledge, the EDI is not being used in South Carolina at this time.

Measures of Academic Progress for Primary Grades (MAP) is a computer-adaptive assessment that is usually administered at least two times each year to assess and measure children's progress. There are three components to MAP including the 1) Skills Checklist Tests, 2) Survey with Goals Tests, and 3) Early Literacy/Numeracy Tests. Collectively, these subtests assess kindergartener through second graders' skills in mathematics, reading, language usage, and science. MAP is commonly used by South Carolina school districts in Grade 1 and 2. MAP is linked with standards in numerous states, including South Carolina's PASS and HSAP.

Teaching Strategies GOLD is an online, observational system that has characteristics similar to Pearson's Work Sampling System. This instrument can be used for progress monitoring from birth to kindergarten. It should be noted that GOLD is planning to expand through third grade to allow for longitudinal analysis. GOLD offers the capacity to measure 10 domains including: 1) social-emotional, 2) physical development, 3) language, 4) cognitive, 5) literacy, 6) mathematics, 7) science and technology, 8) social studies, 9) arts, and 10) English language acquisition. GOLD reports alignment with the Common Core Standards Initiative and can be linked with state standards (e.g., Delaware, New Jersey). It has been adopted by several states as a statewide assessment and is beginning to be used by several Head Start Programs in parts of South Carolina and the nation. Further information about each of these assessments is explained in Table 1 in Appendix A.

School Readiness in Other States

We contacted early childhood personnel in several states across the country, including Delaware, Florida, Maryland, and Minnesota to learn about the various assessments that are currently being used or considered to measure school readiness. All of the states have identified a definition to guide their assessment practices and have mandated statewide school readiness measures for all kindergarteners. Of this group, Minnesota was the exception to this pattern because they assessed school readiness by taking a random sample of ten percent of students within the state. Four of the states developed a new assessment or adapted a current assessment to fit their needs: Maryland and Minnesota adapted Pearson's Work Sampling System to align with their current standards; Florida's Department of Education created the Florida Kindergarten Readiness Screener (FLKRS) from the Early Childhood Observation System (ECHOS) and the Florida Assessment for Instruction in Reading (FAIR); and Delaware adopted the existing Teaching Strategies GOLD assessment system. All of these assessments

measure between five and seven domains including physical development, the arts, social-emotional development, mathematical thinking, and language and literacy. Table 2 in Appendix B shows further details of how school readiness is measured in these states.

Early Childhood Assessments Used in South Carolina

To better understand how school readiness and early school achievement are currently assessed in South Carolina, we developed and administered a survey in collaboration with Pam Wills and Penny Danielson at the South Carolina Department of Education and Dan Wuori with First Steps. This survey was completed by early childhood coordinators or their designees within school districts. We received surveys from approximately 75% of school districts in South Carolina.

The survey results demonstrate that there are some common assessments used in pre-kindergarten (DIAL) and early elementary grades (MAP). The survey also indicated that no single measure is used consistently across the state. Even when the same measure is used in many districts, it may be administered differently, used for different purposes, and the information is retained in local districts.

The most commonly used assessment in 4-year-old pre-kindergartens across South Carolina is the DIAL. Approximately 89% of responding school districts in the state use this assessment in some fashion in pre-kindergarten classes. About half of the responding school districts reported administering this assessment once per year and the remaining half reported performing the DIAL twice per year, usually at the point of entry in pre-kindergarten (fall) and at the end of the academic year (spring).

In kindergarten through second grade, MAP is the most commonly used assessment to determine student achievement and progress. Approximately 40% of districts use MAP in kindergarten, 60% use MAP by first grade, and 68% use MAP in second grade. Other assessments used in the early elementary grades are the Dominie Reading & Writing Assessment Portfolio, the Developmental Reading Assessment, and district-developed assessments, which are employed to assess pre-literacy and literacy and other areas such as pre-numeracy and numeracy.

Recommendation 3

Select a standardized assessment(s) to measure school readiness at kindergarten entry that meets the following characteristics: 1) aligned to school readiness domains (valid), 2) reliable, 3) age appropriate, and 4) feasible to implement and analyze.

Strategy 3.1

Carefully review and pilot test one or more standardized assessments to determine feasibility of implementation and usefulness of results for selected purposes.

Assessments are designed to be administered, reported, analyzed, and used for specific purposes. Deviations in the administration and use of an assessment can compromise and severely limit the validity and reliability of the assessment process. Because of these issues, the assessment administration process must follow a uniform and precise process, so the results are effective for prospective planning, backward mapping, intervention, comparisons, or other policy purposes. We recommend the creation and dissemination of effective professional development programs that address the purposes and practices of assessments. The trainings must include practitioners, administrators, and parents across the state of South Carolina. Questions, concerns, and difficulties must be addressed to ensure that early childhood assessment results can be interpreted and used effectively to make meaningful evidence-informed decisions about early childhood education and children's school readiness.

Strategy 3.2

Provide professional development to practitioners, administrators, and other early childhood stakeholders related to the purposes and appropriate administration of selected assessments to promote the effective use of assessment results.

Evaluating School Readiness in South Carolina

The purpose of evaluating school readiness in South Carolina should not be to merely label children as "ready" or "not ready" or to identify particular schools and districts by their levels of readiness. Rather, the evaluation of school readiness across time should allow for more effective statewide evidence-informed decisions about early childhood services. In addition, evaluation should be based on data-identified local and state needs to encourage focused school readiness efforts and promote children's early elementary school success.

Understanding and assessing the background knowledge and skills of children when they enter pre-kindergarten and kindergarten is critical for planning appropriate and effective instruction to ensure they make progress during the early elementary years. Personnel in schools and school districts can use overall school readiness information to target specific areas to be addressed for their overall kindergarten populations.

More importantly, strengths and areas of concerns can be used to inform communities and early childhood educators' efforts among the birth to 5-year-old preschool populations. The goal is to reduce or eliminate "starting gate inequities" that often linger well into kindergarten and much beyond if not addressed early and adequately. These well-known "inequities" have the potential to reduce both academic and career successes of many South Carolinians. In addition, exploring school readiness assessment results in connection with later state-mandated achievement results (PASS) has the potential to identify influences of environmental and child-level factors on academic achievement so they can be addressed whenever feasible.

Recommendation 4

Establish an on-going mechanism to evaluate school readiness in South Carolina to inform early childhood decision-making and resource planning.

To better understand, evaluate, and disseminate information about school readiness, an entity, with limited incentives or repercussions attached to results, is needed to fully explore and report on state, county, and community level findings. The entity, potentially a Center of Excellence for School Readiness, could work to provide on-going and contemporary information about research and recommended practices to stakeholders who are responsible for the early childhood education services in our communities including First Steps, the South Carolina Department of Education, the Center for Child Care Career Development, teacher preparation programs at South Carolina colleges and universities, and other organizations and entities that are stakeholders in early childhood education as needed.

As a school readiness definition is developed, domains are established, community-level data are gathered and organized, child-level assessments are identified and administered, and professional development is implemented, this entity could carefully analyze the information, provide overall recommendations to essential stakeholders to improve policies and practices,

and provide detailed descriptions to state and county-level stakeholders related to school readiness in South Carolina.

Conclusions

School readiness has moved to the forefront of early childhood education conversations and services across the nation. Nevertheless, easy answers and "magic bullets" about how to proceed do not exist and continued work is greatly needed both locally and statewide. Based on school readiness work since November 2011 (e.g., review of literature, school district survey, discussions with essential stakeholders), we believe that our recommendations provide a reasonable and effective approach to promote continued progress toward improved school readiness in South Carolina. Defining, understanding, assessing, evaluating, and providing targeted and responsive professional development are necessary steps in promoting effective early education services to young South Carolinians and their families.

Each of the four areas described within the system, 1) defining, 2) understanding, 3) assessing, and 4) evaluating school readiness, are essential elements and operate best together in a feedback system that informs and continually enhances evidence-informed decision-making and school readiness efforts. Personnel and stakeholders in many other states and communities have defined school readiness; however, without defining well-targeted and critical domains and then promoting a common understanding of the adopted definition with accompanying appropriate assessments to measure progress toward that definition, early childhood stakeholders' efforts may not be effectively used to inform day-to-day policies and practices.

Other groups have adopted school readiness assessments without a clear and concise definition or identifiable domains, which may cause the assessment to become the de facto definition. In addition, assessments that are not understood well or effectively analyzed to promote attention toward strengths and areas of concern may become mechanical measures performed but not well used. Finally, evaluators' efforts are only as good as information in which they base their findings; therefore, without a clear and concise definition, well targeted domains, community-level data, assessment results, and other information about children and families, future evaluation efforts cannot provide meaningful information and conclusions on which to base evidence-informed policies and practices decisions.

At this point, we are not recommending a school readiness index. We believe the systems-based approach set forth in this report offers the most effective framework to guide South Carolina in its efforts to better prepare children for kindergarten and later school success. The systems approach that we have recommended integrates the lessons learned, experiences, and best practices to better understand and improve young children's school readiness. We believe implementing this type of approach promotes clear focus on the school readiness of South Carolina children and provides a framework for stakeholders in early childhood education to employ effective strategies, policies, and practices. Having a shared understanding of school readiness promotes more productive collaboration among all stakeholders including families. Selecting standardized assessments aligned with the definition and domains of school readiness allows stakeholders to determine areas of strengths and concerns in populations of children. This encourages more effective, targeted services prior to school entry as well as appropriate educational strategies and practices to be used in PK-12 settings. Finally, evaluation of school readiness promotes the use of data from multiple sources to enhance our understanding of children's needs across the state of South Carolina. The evaluation includes sharing data in an easy to interpret format to assist state- and county-level groups in planning and implementing strategies and services.

The South Carolina Challenge

As mentioned earlier, school readiness in early childhood education is in the forefront of contemporary educational issues in the United States. Nevertheless, merely expanding early childhood services without thoughtful development of a comprehensive system to assess and evaluate young children's school readiness is probably not the best solution. Convergent evidence across several decades indicates that early childhood education services in kindergarten and before have meaningful positive effects on young children but only when those services are of ***high-quality and sustained over time*** (i.e., alignment of pre-kindergarten and kindergarten and early elementary educational services and goals; cf. Barnett, 2013). The type of comprehensive systems model that focuses on language and literacy, mathematical thinking, and social emotional development that we recommend will support a renewed focus on a continuous improvement model of early childhood educational for young children and their families in South Carolina.

Appendix A: Selected Assessments

Table 1. Selected Assessments

Assessment	Age/ Grade	Purposes	Format	Psychometric Information	Measures
AIMSweb	K-8	Screening, progress monitoring, program evaluation	Teacher rating of individual student skills completed up to three times per year	Yes	1. Reading 2. Language arts 3. Math 4. Behavior
BRIGANCE Early Childhood Complete Assessment/ Early Childhood Developmental Inventory	0-5 year/ 0-7 year olds	Screening and progress monitoring	Teacher-administered assessment of individual students	Yes	1. Language development 2. Literacy 3. Math and science 4. Social-emotional development 5. Physical health and development 6. Approaches to learning
Developmental Indicators for the Assessments of Learning (DIAL)	3-6 years olds	Screening	Teacher-administered assessment of individual students	Yes	1. Motor 2. Concepts 3. Language 4. Self-help 5. Social development
Early Development Instrument (EDI)	4-5 year olds	Population based screening	Teacher rating of individual student skills	Yes	1. Physical health and well-being 2. Social competence 3. Emotional maturity 4. Language and cognitive development 5. Communication skills and general knowledge
Measures of Academic Progress for Primary Grades (MAP)	K-2	Screening and progress monitoring	Computer-adaptive assessment to be completed by children up to three times per year	Yes	1. Mathematics 2. Reading 3. Language usage 4. Science

Teaching Strategies GOLD	0-K, planned expansion to Grade 3	Progress monitoring	Teacher rating of individual student skills with capability to catalog children's performance (work sampling)	Yes	1. Social-emotional 2. Physical 3. Language 4. Cognitive 5. Literacy 6. Mathematics 7. Science and technology 8. Social studies 9. Art 10. English language acquisition

*References for detailed psychometric information are available at the end of this report.

Appendix B: School Readiness Assessments in Other States

Table 2. School Readiness Assessments Used in other States

State	Definition	Legislation	Assessment	Measures	Domains
Delaware	Yes	Mandated, all children	Delaware Early Learner Survey (DE-ELS)	Teaching Strategies GOLD	1. Cognitive 2. English language acquisition 3. Language 4. Literacy 5. Math 6. Physical development 7. Social-emotional
Florida	Yes	Mandated, all children	Florida Kindergarten Readiness Screener (FLKRS)	Developed by the Florida Department of Education, based on the Early Childhood Observation System(ECHOS) and the Florida Assessment for Instruction in Reading (FAIR)	1. Language and literacy 2. Mathematics 3. Social and personal skills 4. Science 5. Social studies 6. Physical development 7. Creative arts
Maryland	Yes	Mandated, all children	Maryland Model for School Readiness (MMSR)	Developed by the Maryland State Department of Education, based on Pearson's Work Sampling System	1. Personal and social development 2. Language and literacy 3. Mathematical thinking 4. Scientific thinking 5. Social studies 6. Art 7. Physical development
Minnesota	Yes	Mandated, 10% random sample	Minnesota Work Sampling System	Developed by the Minnesota State Department of Education, based on Pearson's Work Sampling System	1. Physical development 2. Art 3. Personal and social development 4. Mathematical thinking 5. Language and literacy

Appendix C: Psychometric References by Selected Assessment

AIMSweb

National Center on Intensive Intervention, American Institutes for Research. (n.d.). *Academic Progress Monitoring GOM*. Retrieved from http://www.intensiveintervention.org/chart/progress-monitoring

Pearson, Inc. (2012). *AIMSweb: Technical Manual*. Bloomington, MN: Pearson, Inc.

Brigance Early Childhood Development System/Early Childhood Screen 3-6 Years

Brigance Early Childhood Research, Curriculum Associates LLC. (n.d.). *BRIGANCE® Early Childhood Screens: Standardization and Validation Research Highlights*. Retrieved from http://www.casamples.com/downloads/Brig-EC-research.pdf

Halle, T., Zaslow, M., Wessel, J., Moodie, S., & Darling-Churchill, K. (2011). *Understanding and Choosing Assessments and Developmental Screeners for Young Children: Profiles of Selected Measures*. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Developmental Indicators for the Assessments of Learning

Halle, T., Zaslow, M., Wessel, J., Moodie, S., & Darling-Churchill, K. (2011). *Understanding and Choosing Assessments and Developmental Screeners for Young Children: Profiles of Selected Measures*. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Early Development Instrument

Janus, M., Brinkman, S., Duku, E., Hertzman, C., Santos, R., Sayers, M., & Schroeder, J. (2007). *The Early Development Instrument: A population-based measure for communities, A handbook on development, properties, and use*. Hamilton, ON: Offord Centre for Child Studies..

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