What Works for Third Grade Reading
NC Pathways to Grade-Level Reading Working Paper

Promotion to Next Grade: High Quality Birth-through-Age-Eight Learning Environments with Regular Attendance

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I. Pathways Measure of Success

Percent of children promoted to next grade level (K-3)

II. Definitions

The following terms are referenced in this brief:

Adverse Childhood Experiences (ACES) refers to a set of experiences in the lives of young children including child abuse and neglect, along with a set of family circumstances including parental substance use, mental illness and incarceration, family domestic violence and the absence of parent through divorce, death or abandonment.[i] Extensive research has linked adverse childhood experiences to chronic health problems, risky health behaviors and even death.[ii]

Academic press means that a school has high academic expectations and academic norms for all students.[iii]

Communities In Schools, a school reform model implemented in 2300 schools across the nation, brings the resources of a community into the schools through a formal community coordinator onsite in the school who links students and families with integrated supports and services.[iv]

Community Schools Model is a model for school reform that has, at its core, expanded learning experiences in school, after school and over the summer; offers integrated social service and health supports; recognizes and engages families the community as assets; and build linkages with the early education pre-school sector.[v]

Double dosing within a school-based mathematics context means having students enroll in two or more math courses within a regular school day.[vi]

Good cause promotions are described by the National Conference of State Legislatures as factors that may be employed to promote a student to the next grade when policy or legislation would otherwise require grade retention. These factors include special education status, limited English proficiency, prior record of retentions, teacher-parent recommendations, and the demonstration of proficiency based on a student work portfolio or approved alternative academic assessment.[vii]

Dyslexia is a learning difficulty that interferes with the acquisition and processing of language, contributing to reading, writing and spelling challenges.[viii] Dyslexia is neurological-based and is not caused by a lack of intelligence or insufficient opportunities for learning. Dyslexia impacts five percent of the total student population.[ix]

Early warning systems examine sets of indicators known to be valid predictors of an outcome. In an education context, these have been developed largely to predict the likelihood of high school dropout. Core predictors used in many early warning systems are chronic absenteeism, significant disciplinary infractions, and grades in core subjects. Although often employed at 8th or 9th grade, these predictors have proven accurate as early as the 6th grade.[x]

Educational equity means that "every student has access to the resources and educational rigor they need at the right moment in their education, despite race, gender, ethnicity, language, disability, family background, or family income."[xi]

Family engagement is defined as an ongoing, reciprocal relationship—or partnership—between a family and the professionals and providers serving its children. Family engagement is built on the recognition of individual and family strengths and respect for culture and diversity.[xii] When strong, positive family-provider relationships exist, family engagement increases.[xiii]

Grade retention is requiring that a student re-enroll in the same grade for a second year. Through October 2015, 15 states plus the District of Columbia required third grade retention of students when reading proficiency was not attained, and four additional states permitted retention but did not require it.[xiv]

Implicit bias is defined as a set of stereotypes or attitudes that become activated without the conscious action of an individual. Implicit bias is "fueled by stereotypes perpetrated in the media, or beliefs passed along by parents, peers and other community members." Implicit bias begins to develop among children as young age three,[xv] has been found to exist among preschool teachers, and may explain expulsion rates among African American preschoolers.[xvi]

Instability is described by the Urban Institute as "the experience of change in individual or family circumstances where the change is abrupt, involuntary, and/or in a negative direction, and thus is more likely to have adverse implications for child development."[xvii]

Integrated Student Supports as defined by Child Trends is a whole-school framework to improve student outcomes, decrease grade retention and improve graduate rates through a portfolio of integrated academic and non-academic student supports. These include traditional academic supports such as tutoring, as well as linking students to physical and mental health care and their families to employment, nutrition, counseling and parent education resources.[xviii]

North Carolina Read to Achieve is a legislative initiative that is part of the Excellent Public School Act.[xix] The law prescribes a set of actions to be taken when students are not deemed to be proficient readers by the end of the third grade. These actions include being retained in the third grade with accelerated supports, being assigned to a transitional 3rd/4th grade class with remediation, or being placed in a fourth grade accelerated reading class that includes remediation.[xx] *Accelerated reading class* in this context means a class where focused instructional supports and services are provided to increase a student's reading level at least two grades in one school year.[xxi]

School mobility refers to the amount and timing of students' moves between classrooms, schools or school districts. Student mobility generally refers to students changing schools within the school year and is often related to family economic or employment changes, or homelessness.[xxii]

Social promotion is the practice of passing a student on to the next grade regardless of whether he or she meets grade level expectations.[xxiii]

Tiered interventions is an approach to addressing the needs of all students with specific interventions targeted to students whose performance is not at expected levels. Tier I includes a system of supports for all students, including both classroom- and school-level supports. Tier II (and, sometimes Tier III) interventions involve both individual and small group strategies for students whose needs exceed what is able to be met by Tier I supports.[xxiv] Response to Intervention (RtI) is the best-known example of the application of tiered interventions.[xxv]

III. Promotion to Next Grade: Why it Matters

About 10 percent of students in America's public schools are retained at least once during their kindergarten through eighth grade educational years.[xxvi] Based on data from 2010, between two and three percent of public school students across the nation were retained, more in high school than in the elementary school years. About one percent of students were retained in kindergarten through the 8th grade, with most during the kindergarten and first grade years.[xxvii]

As reported by the National Conference of State Legislatures, 15 states and the District of Columbia have enacted retention for reading problems at the third grade, including North Carolina. Fourteen of these states also allow conditional promotion for good cause. Nine states allow retention but do not require it.[xxviii] Research has shown that mandatory retention creates challenges for schools as well as students, although the costs associated with this policy may not be constant over time. In Florida, for example, the 2003 mandatory third grade retention policy resulted in an immediate 13.5 percent increase in the total number of third graders; however, the number of student then fell steadily over the next five years as more students met academic expectations.[xxix]

As a policy matter, there is no national consensus on whether grade retention is helpful or harmful, or whether that decision should be mandatory or left to teacher or teacher/parent discretion.[xxx] Grade retention may be recommended by teachers when a younger student demonstrates developmental delays, behavioral challenges, lack of motivation to learn,[xxxi] or lack of progress in grade level reading.[xxxii] When retention is not mandatory, teachers' beliefs about children's development and school readiness can impact their recommendations for retention or promotion, and these beliefs or recommendations may not be consonant with views held by parents.[xxxiii]

Retention can stigmatize children in the eyes of their teachers or peers as being "less-than" smart or capable. Teachers may also internalize beliefs about the abilities of students who have been retained. Retained children may then internalize these negative beliefs, causing their performance to suffer.[xxxiv] This can limit student engagement in school and performance, and its impact may compound over time.[xxxv]

Retention in elementary school correlates with a reduction in the likelihood of high school graduation.[xxxvi] Insofar as grade retention increases the likelihood of dropping out of high school, it may also contribute to racial disparities.[xxxvii] Research is mixed on whether academic benefits gained from retention in the early grades last beyond a few years and whether those benefits are offset by negative social-emotional impacts of retention.[xxxviii] One study found that students view retention as a strongly negative event, ranked just after the loss of a parent.[xxxix] In Florida there is a mandatory third grade retention policy that includes specific remediation requirements. The dual retention-remediation design reduces the likelihood that a child will be retained again in later grades, but has "no clear impact" on either student absences or special-education placement rates.[xl]

More than a decade ago, in 2003, the cost of grade retention in North Carolina was estimated to be about $170 million annually, based on an average annual cost of $7500 per student.[xli] In 2014, the average per pupil investment in education in North Carolina was $8,512 (down from $9,129 in 2010).[xlii]

The alternative to grade retention, social promotion, does not effectively improve students' educational success.[xliii] Social promotion pushes children into learning contexts for which they lack the required academic knowledge or skills.[xliv] The costs of social promotion are more difficult to track than the costs

of grade retention. They do include, however, the effect on both teachers and students of having classes in which students of widely varying levels of abilities are enrolled.[xlv]

IV. Promotion to Next Grade: Connections to Other Pathways Measures of Success

Just like the domains of child development, the Pathways Measures of Success are highly interconnected. The table and text below outline the measures that *influence* or *are influenced by* Promotion to Next Grade.

Health and Development on Track, Beginning at Birth	Supported and Supportive Families and Communities	High Quality Birth-through-age Eight Learning Environments with Regular Attendance
Healthy Birthweight	Formal and Informal Family Supports	High Quality Birth-through-age-Eight Early Care and Education
Early Intervention	Reading with Children	Summer Learning
Social-Emotional Health		Regular Attendance
Physical Health		

Healthy Birthweight and Physical Health

Low birthweight is linked to short- and long-term health problems, learning disorders, behavioral problems, grade retention and school failure.[xlvi] Low birthweight babies generally score lower on reading, passage comprehension, and math achievement tests,[xlvii] and are more likely to be enrolled in special education classes.[xlviii] The presence of chronic health challenges such as hearing[xlix] and vision[l] problems can have a direct and deleterious impact on reading development, while other chronic health problems like asthma[li] and dental decay[lii] can impact on young children's learning and attendance and, therefore, academic success.

Early Intervention

The most prevalent academic challenge for students with learning disabilities is reading. Between six in ten and nine in ten students with learning disabilities have reading difficulties.[liii] Among young children, the most frequent delay reported by parents is in the domain of language and communication.[liv] Reading delays and other developmental delays can lead to retention in grade.

Social-Emotional Health

Along with academic grades and chronic absences, behavioral incidents in the early grades are predictors of later academic challenges that may result in grade retention.[lv] Being retained in grade may, on its own, complicate continued social-emotional growth, resulting in students' low self-esteem, the development of poor attitudes toward the school experience, and subsequent academic disengagement.[lvi]

Formal and Informal Family Supports

Children who experience frequent, abrupt changes in housing demonstrate less positive academic and social outcomes, including behavior challenges, weaker vocabulary skills, grade retention and higher

high school dropout rates.[lvii] Children in the elementary school years appear to be more sensitive to residential instability than younger or older children.[lviii] The economic or employment instability of parents is also correlated with grade retention.[lix]

Reading with Children

Retention in early grades is often due to an inability to read proficiently.[lx] Regular parental book reading is correlated with young children's language development, early reading achievement, and school readiness.[lxi]

High Quality Birth-through-age-Eight Early Care and Education

High-quality early learning and preschool programs help prepare all children for school and life success. Children in higher quality programs have more advanced language and pre-math skills, more advanced social skills, and warmer relationships with their teachers.[lxii] Students enrolled in community schools have better academic outcomes including lower rates of grade retention.[lxiii] Students enrolled in the Communities In Schools model have a 93 percent grade promotion rate, increased attendance and graduation rates.[lxiv]

Recent studies of North Carolina children as they progressed through the elementary school system shows robust positive effects of quality early education in third graders' test scores for reading and math,[lxv] and a reduction in special education designations at the third grade.[lxvi] Even more recently, further research on the impact of North Carolina's early education programs found "significant positive impacts" in math and reading scores, along with reductions in grade retention and special education in the fifth grade.[lxvii] Specifically, the study found that fifth grade students living in North Carolina counties with "average levels" of NC Smart Start and More at Four (NC PreK) funding experienced six additional months of reading instruction and three additional months of math instruction, and had higher reading and math scores from the third through the fifth grades.[lxviii]

Summer Learning

Children learn best and retain information more when learning is uninterrupted.[lxix] Low-income children fall behind by as much as two months of reading and math achievement during the summer, while their middle-income peers make slight gains in reading.[lxx] On average, children experience greater levels of math learning loss than reading learning loss.[lxxi] These losses compound year after year, and some research has found that summer learning loss accounts for as much as 80 percent of the income-based achievement gap.[lxxii]

Regular Attendance

Attendance challenges and grade retention appear to have a circular relationship. Daily attendance and engagement in learning are among the primary influencers in grade retention. A school environment that promotes positive student-teacher interactions and classroom engagement supports regular attendance and achievement scores, while chaotic school environments, lack of consistent discipline or engaging instruction, and low parent engagement can contribute to lower student attendance rates.[lxxiii, lxxiv] Grade retention has also been identified having a psychosocial impact on student engagement in following years, contributing to higher levels of chronic absence.[lxxv]

V. Context Matters: Promotion to Next Grade

The following issues are important to consider when planning policy, practice and program strategies to address Promotion to Next Grade.

Reasons for grade retention appear to vary by grade. In the third grade, retention is more likely based on students' failure to achieve a certain academic benchmark (e.g., reading at proficiency levels). In kindergarten and first grade, grade retention decisions also include such considerations as age-related developmental readiness or immaturity, and/or behavioral challenges.[lxxvi]

Predictors of third grade retention at kindergarten entry include low academic skills in reading and mathematics as well as lower general knowledge of the "physical and natural world."[lxxvii] Children who have less well developed fine and gross motor skills or who exhibit more behavior problems than their peers are also more likely to be retained in later elementary school grades. Controlling for poverty status, children with lower academic skills are most likely to be retained.[lxxviii]

Student circumstances that can contribute to early learning challenges and grade retention include hearing, vision and health problems, reading-specific disabilities such as dyslexia, and social-emotional problems that lead to behavioral incidents, suspension or expulsion. Boys are 70 percent more likely than girls to be retained in the early grades.[lxxix] Students in the early grades are more likely to be retained in grade if they are younger than their peers in the same grade.[lxxx] In fact, for each month that a child's age increases at entry to kindergarten, the risk of third grade retention decreases by eight percent.[lxxxi]

Adverse childhood experiences (ACEs) in students' early lives often result in delayed or altered cognitive, language, social and emotional development, and executive function and self-regulation skills.[lxxxii] Together, these experiences can lower academic performance, create attendance problems and result in school retention.[lxxxiii]

Family circumstances that can contribute to children's early learning challenges include living with low-income, family trauma and dysfunction, and housing instability. Early elementary school students whose parents have less formal education, whose families are low-income[lxxxiv] or are of color[lxxxv] are more likely to be retained than their peers. For each one-year decrease in maternal education, the likelihood of grade retention increases by five percent.[lxxxvi]

Teacher and school circumstances that can impact student success include implicit bias, a non-supportive school climate, poorly resourced settings, and inadequately prepared teachers and/or school leadership.

Environmental Assets. Several environmental assets can serve as protective factors that influence an individual's development. These *institutional factors* include a caring school climate, parental involvement in schooling, clear rules and consequences in the school and family, and high expectations from teachers and parents. *Individual factors* include the motivation to achieve, school engagement, and feeling connected with the school.[lxxxvii] In a national longitudinal study of adolescent health, school connectedness and students' grade point average were correlated.[lxxxviii]

Academic Press. While the school environment has been shown to promote achievement when it is welcoming and when students feel connected, a successful environment also employs "academic press."

Research has shown that math achievement among low-income students was the greatest in schools with high academic press coupled with a strong sense of community.[lxxxix] Related research reveals that student learn most when they experience both high academic press and strong social support within and beyond their school.[xc]

Systemic Barriers to Early Literacy. The period from birth to eight represents a time when children learn critical foundations for reading skills. Current programs aimed at developing early literacy skills are often fragmented due to different governmental systems that oversee education programs.[xci]

VI. Policy Options that Support Early Grade School Success

A Comprehensive Framework for Young Children's Academic Success. *Advancing students' academic success in the early grades—thus reducing or eliminating the need for either grade retention or social promotion—will require an intentional, comprehensive framework that involves students, families and teachers working together at the school, community and state levels. This overarching approach would build upon scientifically-informed policies and practices identified in several other Pathways working papers as well.*

Development of a comprehensive, birth-to-third grade systems approach to children's development and academic success in North Carolina can be anchored in:

- Recent legislation calling for birth to eight systems alignment and a shared measurement, including consideration of the North Carolina Pathways to Grade Level Reading measures
- Continued legislative interest in increasing interagency coordination and collaboration
- Development of a K-3 formative assessment
- Progress or learning from federally-supported Early Childhood Comprehensive Systems grant awards to North Carolina[xcii]
- North Carolina's Every Student Succeeds Act (ESSA) state plan
- Current evaluations of North Carolina early childhood programs like Smart Start and NC PreK

Several states have created separate early childhood agencies to better coordinate, align and fund early childhood programs[xciii] including the Georgia Department of Early Care and Learning,[xciv] Massachusetts Department of Early Education and Care (within the Executive Office of Education),[xcv] Washington State Department of Early Learning,[xcvi] Pennsylvania Office of Child Development and Early Learning (jointly supervised by the Departments of Public Welfare and Education),[xcvii] and Connecticut Office of Early Childhood.[xcviii] Notably, some of these structures represent strong alignment with early learning and education agencies (Georgia and Massachusetts), while others have stronger connections with health and human services agencies (Connecticut and Washington). North Carolina's Office of Early Learning sits within the Department of Public Instruction and brings together some of the functions of a birth to eight education system.

North Carolina communities have taken strides in building comprehensive early childhood systems. Some examples include:

Great Expectations, Forsyth County. Great Expectations is a philanthropic 10- to 15-year investment in achieving healthy development, school readiness and kindergarten success for all children living in Forsyth County. The Kate B. Reynolds Charitable Trust is investing between 30 and 40 million dollars

to forge broad partnerships with "families, providers, organizations and systems," work with "two, or even three" generations, create "healthy and nurturing environments for their young children."

MDC is the activating agency coordinating and supporting this effort.[xcix] Guided by the *Great Expectations Activation Plan,*[c] this effort will seek improvements in child and family health, self-regulation and executive function among children and adults, and in parent-child interactions and adult caregiving capacity. Great Expectations will support children's oral language and vocabulary development and build parent, provider, community and systems capacity.[ci]

Grant-making is focused on systems building through investment in three areas: health and early intervention, access to quality child care, and birth to eight educational alignment. These investments are guided by the following principles:

- System-wide accountability and alignment at the agency-level and based on improved data alignment, collection, analysis and decision-making
- Moving to scale through community investment and by leveraging other systems reform efforts
- Aligned communications
- Strengthening work on behalf of Latino families and Latino-led initiatives
- Family engagement including "elevating family voice"
- Engaging unlikely partners including the faith and health care sectors, and educators.[cii]

The Forsyth Promise, Winston-Salem. The Forsyth Promise is a member of the StriveTogether National Cradle to Career Network. The Forsyth Promise[ciii] was created in 2011 and is committed to building a cradle to career infrastructure and a new way of partnering to assure that all children in the county are achieving kindergarten readiness from birth, experiencing academic proficiency and growth, graduating from high school and completing post-secondary education. The kindergarten readiness community action network collaboratively identifies and promotes "evidence-informed best practices and the effective use of data, in order to support children, birth to Kindergarten, and their families so that every child will have the skills needed to be successful learners."[civ]

East Durham Children's Initiative, Durham. This place-based effort, modeled after the Harlem Children's Zone and now in its sixth year, is a comprehensive, cradle to high school graduation effort focused on a specific area of East Durham.[cv] Led by a nonprofit established specifically for this purpose, the East Durham Children's Initiative is also affiliated with the Duke University Center for Child and Family Policy. Its goal is to increase high school graduation through careful, community-based investments and service capacity improvements and connections beginning in early childhood.[cvi] In February 2017, Child Trends profiled programs supported through the East Durham Children's Initiative.[cvii] These include Durham Connects (now Family Connects), a nurse home-visiting program for all families of newborns, the EDCI LEAP Academy which is a half-day bilingual preschool program for children ages 3 to 5 without an earlier formal preschool experience, Early Childhood Parent Advocates, childcare subsidies that are prioritized to meet family needs, and kindergarten readiness initiatives.[cviii]

Opportunity Task Force, Charlotte. The Opportunity Task Force was convened in 2016, following a 2013 report that Charlotte, North Carolina was 50th among 50 cities in upward mobility, and violence between policy and city residents in 2016 following the police shooting of an African American

resident.[cix] The Task Force identified two cross-cutting themes that impact child and family success—racial segregation and social capital—and focused on "three highly interrelated determinants…most likely to have the greatest influence on the opportunity trajectory of an individual: early care and education; college and career readiness; and child and family stability."[cx] Strategies are articulated for each of these determinants that include many of the influencers of grade retention identified in this brief.[cxi]

An Early Warning System for PreK through Third Grade. *Establish policy guidance for a cross-district, standardized early warning system framework, including early grade attendance data, behavior data, and a set of academic performance measures (PreK-3rd grade), by which schools can identify and support students at risk of challenges sufficient to invoke grade retention. This will likely require a partnership between the academic research community, the Department of Public Instruction and a group of school districts willing to participate in an early warning learning consortium.*

Early warning systems were first created at the high school level to identify students at risk of dropping out. The systems use student data to monitor, identify, and intervene with those at risk of failure to graduate. Such systems are used by half of all school districts nationally.[cxii] These systems identify students at-risk of missing key educational milestones, determine their needs, and identify interventions to help them get back on track.

Data commonly used includes attendance, behavior, and course performance,[cxiii] although other data, such as homelessness, types and incidents of ACEs among young children and their parents, or child welfare system involvement, could also be analyzed. The City of Baltimore created an early warning system at the middle school level, including such indicators as chronic absence, past retentions, suspensions, and course failure in English and/or math. Research has shown that use of this middle school early warning system accurately predicted non-graduation from high school.[cxiv] Tennessee has funded a demonstration project to include ACEs training and data as part of its early warning practice. It does not describe this effort as an Early Warning System, however.[cxv]

Early warning systems data can be used at the student or population level, including to:
- Identify and afford individual students expanded learning, health and other supports
- Guide reform efforts within schools with high levels of grade retention, low student academic performance, and/or high levels of negative social determinants of health and learning by determining whether certain interventions prevent students from falling behind when risk factors suggest that they are likely to.[cxvi]

Since chronic absenteeism begins in the early years of schooling, an elementary-grades early warning system could help schools mobilize family, school, district, and community supports and interventions in the earliest years. The American Institutes for Research[cxvii] has created an early warning rubric specifically for North Carolina that utilizes the *NC Risk Report and Diploma Assessment Report* available in PowerSchool. This tool enables schools and districts to identify and support students at risk of dropping out of high school. Work on an early-grades warning system could be built from this tool.

PreK through Third Grade Alignment. *Based on evidence of effectiveness from national evaluations of school districts implementing PK-3 alignment and from North Carolina's FirstSchool Initiative, determine what statewide educational policy change is needed to authorize and support broader statewide expansion of PK-3 alignment.*

Common core elements in PK-3 alignment (also called a "three to third" approach) include:

- High quality preschool for three- and four-year old children
- Attention to the transition between preschool and kindergarten
- Alignment of curriculum from preschool through the third grade
- Cross-training of teachers across PK-3, anchored in developmentally-informed, child-centered learning
- Instructional practices that support individual children's academic and social-emotional learning
- Active parent and family engagement
- Collection and use of data for quality improvement and accountability[cxviii]

At least one evaluation of a state's PK-3 system has shown positive results. A five-year RAND evaluation of Hawaii's P-3 initiative, conducted over the period 2008 through 2014, revealed third grade reading improvement equal to an additional nine weeks of schooling each year with more students in the participating group achieving reading proficiency than among the comparison group. Key contributors to this success were the development of cooperative, informed relationships among teachers across PK-3, newly implemented early learning standards, local decision-making on activities, the establishment of measurable outcomes, better policymaker-staff relationships, and parent support.[cxix]

The National P-3 Center at the University of Washington notes that while PK-3 alignment is being implemented in many states, additional research to document both the implementation process and student outcomes is required.[cxx] A core guidance document available from the national P-3 center, *Framework for Planning, Implementing, and Evaluating PreK-3rd Grade Approaches*, could be used to examine extent or needed evidence of effectiveness.[cxxi]

North Carolina's *FirstSchool* was launched in 2005 to create a seamless experience from preschool through the third grade for children and families, with special attention to the needs of vulnerable children.[cxxii] FirstSchool is located at the Frank Porter Graham Child Development Institute, University of North Carolina, and is aligned with the national P-3 Center housed at the University of Washington.[cxxiii] Implementation of a PK-3 approach crosses grade levels and often program sites, involves several groups of stakeholders (i.e., families, teachers and administrators), and often involves change at the policy and practice levels, including professional development, data development and use, and accountability.[cxxiv]

Student Development in Mathematics. *Assure that early childhood and elementary teachers are adequately trained and prepared to incorporate mathematics as a developmentally-appropriate, intentional component in PreK through third-grade education.*

A decade ago, a study of young children's math skills[cxxv] revealed that math skills were more strongly linked to academic performance in the 5th and 9th grades than were early literacy skills.[cxxvi] States are taking notice. The National Conference of State Legislatures reported on changes by five states during the 2015 legislative session to support improved mathematics instruction. Georgia increased "funds for differentiated pay for newly certified math and science teachers" as well as funds for K-5 math mastery initiatives. Iowa funded a broad-base of salary and support improvements for K-12 mathematics and science teachers and programming. Michigan created a statutory requirement for the inclusion of mathematics skills in its kindergarten readiness assessment. Texas authorized the creation of Math Achievement Academies for K-3 teachers to improve instruction on core numeracy skills. Utah created a

Science, Technology, Engineering and Math Center to improve academic learning among K-6 students.[cxxvii]

Early mathematics knowledge and skill begins to develop in the first three years of life, prompted and supported by parental and caregiver interaction though such activities as counting, grouping and comparing.[cxxviii] However, a 2015 study of preschool learning opportunities in mathematics and science found that, while "many young children do have access…there is not a general consensus among educators about how much and what types (of learning activities) are essential in early childhood classrooms."[cxxix]

North Carolina's Department of Public Instruction sets guidelines for math instruction through its *Standard Course of Study for Mathematics* with online resources from kindergarten through the eighth grade[cxxx] and through its three-level *Standards for Mathematical Practice*.[cxxxi] North Carolina's mathematics proficiency standards are challenging—they are the fourth highest in the nation at the fourth-grade level and second highest in the nation at the eight-grade level.[cxxxii]

In the 2011-2012 school year, 96 percent of North Carolina high schools, 58 percent of middle schools and 21 percent of elementary schools used double-dosing in mathematics education (taking math for two periods of the day) for remediation, enrichment and/or maintenance.[cxxxiii] Remediation was most common at the middle and elementary school level. One in 100 elementary school students participated. At the middle school level, 56 percent of students receiving double-dosing in math met academic expectations as compared with 36 percent in schools not using this approach. There was no statistical difference at the elementary school level.[cxxxiv]

Based on recent mathematics assessments among a sample of North Carolina fourth- and eighth-grade students as part of the 2015 National Assessment of Educational Progress, North Carolina's fourth-grade student scores increased in reading and held steady in mathematics. Both scores were slightly higher than the national averages.[cxxxv] North Carolina also assesses mathematics performance at the end of the third grade.[cxxxvi] Over the three years between 2014 and 2016, the percent of students demonstrating proficiency at the end of third grade rose from 51 percent to 55 percent. The change in math scores was greater than the change in reading scores, which increased by 0.6 percent over the same period.[cxxxvii]

VII. Practice Options that Support Early Grade School Success

Promoting Family Engagement

More than a decade of research has documented that a positive family-provider connection increases family engagement, and that family engagement contributes to the academic motivation, grade promotion and social-emotional development of young children. For practices to be effective at promoting children's development, they must also be regarded by the family is useful.[cxxxviii] Some family engagement practices include:

Creating a Welcoming Environment. Feeling welcome within a setting is one of the factors rated by parents as most important to their engagement.[cxxxix] Strategies valued by parents include being greeted at the door, creating a parent resource room, providing signed directions to various parts of the setting, and using multi-language resources. [cxl]

Mitigating Cultural and Racial Implicit Bias. Implicit bias held by program staff and leaders contribute to family disengagement.[cxli] Attention to implicit bias and its impact on racial inequity has been the recent focus of work in the criminal justice system,[cxlii] health and health care,[cxliii] education[cxliv] and housing.[cxlv] Recent research has shown implicit bias to be malleable when an individual or group is faced with "new information" that causes the reinterpretation of previous knowledge.[cxlvi] Strategies that can help to mitigate implicit bias include home, neighborhood and community visiting by program staff, holding family meetings in neutral settings, and hosting family-accessible community meetings.[cxlvii]

Engaging in Teacher Home Visits*.* Research that shown that when teachers visit families, parents build greater confidence in engaging with their children's programs, and lower elementary grade school teachers build a better understanding of environmental influences on home settings. Children benefit as well, performing better in math, reading and their ability to adapt to their school classrooms.[cxlviii] Several states encourage opportunities to meet with teachers during the summer before the school year starts, home visits, orientation programs, and school-wide activities to welcome new families.[cxlix]

Engaging in Respectful, Responsive Two-Way Communication. Communicating with families through a variety of modalities and media is a core practice in building family engagement.[cl] Evidence-based strategies include translating all written material into the native language of families and making translators available, asking parents about their preferred forms of communication, engaging in responsive listening, and gathering parent input.[cli]

Practicing Shared Decision-Making. While many programs indicate that they include parents in discussions and seek to advance parental leadership, parental opportunities to become real decision makers is more limited.[clii] Research has also shown that families from minority cultures may feel reserved and even alienated from school engagement activities.[cliii] Evolving U.S. immigration policy may exacerbate parental disengagement among some sectors of American society.[cliv]

Promoting Parental Learning. The federal *Compendium of Parenting Interventions* provides an extensive review of effective programs that advance adult and parental learning in relation to their children. See the Pathways *Parent-Child Interactions* working paper. In addition to evidence-based programs, the Compendium has identified a group of research-informed practices that when implemented with fidelity can support positive parent-child interactions, including:
- Teaching or modeling parenting and discipline skills
- Modeling healthy interactions with children
- Sharing information with parents about child development
- Affirming parents' strengths, self-efficacy and empowerment.[clv]

Using these practices can improve parent-child interactions, advance more positive parenting and discipline behavior, and reduce parenting stress. Children benefit as well, through increased social-emotional competence and improved cognitive, language and literacy development.[clvi]

Offering Family Supports. Common barriers that reduce the likelihood of family engagement with the programs that serve their children include child care and transportation. Strategies that support families' participation include providing taxi or Uber passes, volunteer drivers, and providing or paying for child care while parents are in attendance.[clvii]

Conducting Early Identification Followed by Effective Intervention

Assuring that children progress successfully from grade to grade begins at birth and is dependent upon both a base of family supports and a regular process of understanding where children are at each age and stage of their development. The early identification of learning challenges can reduce the likelihood that children's academic performance or developmental status may lead to grade retention in the K-3 years. Several of the other Pathways working papers address this, including:

- *Physical Health* working paper addresses developmental, social-emotional, lead and hearing and vision screening
- *Social-Emotional* working paper addresses the impact of trauma and adversity on the learning process
- *Early Intervention* working paper addresses early identification of learning and developmental delays
- *Early Education* working paper addresses issues of quality, content and access to early care and education settings and quality and effectiveness issues related to K-3rd grade.

Screening, assessments and intervention are needed for both reading and mathematics to ensure grade promotion and early learning success.

Reading Screening and Intervention. Because reading problems in the third grade increasingly provide the context for decisions about grade retention, screening for challenges in early literacy skills should be systematically incorporated into preschool and early elementary school practice.[clviii] There is a large body of research on early literacy and reading interventions that address one or several of the five core elements of reading: phonemic awareness, phonics, fluency, comprehension, and vocabulary.[clix] A screening and intervention protocol could include:

- *Screening*. All students are screened for potential reading problems twice a year, once when school begins and again mid-year.
- *Differentiated Instruction*. Time for differentiated reading instruction is provided for all students based on current reading level assessments.
- *Small Group Intensive Instruction*. For students who perform below a benchmark score on universal screening, focus on foundational reading skills through small-group intensive intervention.
- *Monitor Progress*. The progress of students in small ground instruction is monitored monthly.
- *Daily Instruction*. For students who make only minimal progress in small group instruction, daily intensive instruction is provided.[clx]

Mathematics Screening and Intervention. In 2014, the National Council of Teachers of Mathematics published *Principles to Actions: Ensuring Mathematical Success for All*,[clxi] which included the following set of effective practices. Text provided below is cited directly from the source document.

- *Goals*. Establish mathematics goals to focus learning.
- *Tasks*. Implement tasks that promote reasoning and problem solving, allow multiple entry points and varied solution strategies.
- *Math Representations*. Use and connect math representation to deepen understanding of mathematics concepts and procures and as tools for problem solving.

- *Discourse*. Facilitate meaningful math discourse to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
- *Inquiry.* Pose meaningful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.
- *Procedural Fluency*. Build procedural fluency from conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve problems.
- *Productive Struggle.* Provide students, individually and collectively, with opportunities and supports to engage as they grapple with mathematical ideas and relationships.
- *Evidence of Student Thinking*. Use evidence of student thinking to assess progress toward mathematical understanding and to continually adjust instruction.[clxii]

The What Works Clearing House provides a set of evidence-informed practices around mathematics instruction: universal screening; focus on whole and rational numbers at specific grades; use of explicit and systematic instruction; use of visual presentations of mathematical ideas; daily focus on fluid retrieval of basic arithmetic facts; monitoring progress and including motivational strategies for Tier II and Tier III interventions.[clxiii] Although these were reported in 2009, a recent review of the literature by Hanover Research confirms the evidence base for these practices and the finding that elementary school math interventions are essential to avoid later proficiency challenges.[clxiv] The review also reports that "researchers have identified fluency and proficiency with basic arithmetic combinations and the increasingly accurate and efficient use of counting strategies as indicators of early math proficiency."[clxv]

Adopting a System of Whole School, Tiered and Integrated Student Supports

More than 3,000 school districts across the nation employ a whole school, formal Integrated Student Supports framework and serve more than 1.5 million K-12 students, largely African American and Hispanic students living in circumstances that are predictive of academic challenge.[clxvi] The largest provider of the Integrated Student Support framework is Communities In Schools, operating in just over 2,300 schools including in North Carolina.[clxvii] Core practices across sites are:

- Specific Integrated Student Support staff conduct needs assessments and locate or develop community supports, and coordinate with providers so students receive a customized set of mutually reinforcing supports that meet their needs.
- Wraparound supports are both academic and non-academic and may include supports for students' families.
- School leadership and staff working in close partnership with Integrated Student Support staff who are generally sited within a school.
- Student needs and progress are tracked over time.

Emerging research findings include a reduction in grade retention and student dropouts along with improvements in attendance, math and reading achievement, and overall academic performance as measured by students' grades.[clxviii] Preliminary research on return on investment (ROI) reported by Child Trends in 2014 include a positive return on investment of between $10.30 and $11.60 for every dollar invested over time.[clxix]

A 2017 MDRC study[clxx] of the Communities In Schools practice model further clarified core practice elements of this whole-school reform model, including expansion from two to three tiers of integrated student supports. Supports are available across ten domains—academic assistance, basic needs and

resources, behavior, college and career preparation, community services, motivation and enrichment, family engagement, life and social skills, physical health, and mental health—at each of three tiers, based on student needs.

Tier I offers school-wide access to these supports for all students, provided over a short duration and at low intensity levels. Tier II supports are provided to groups of students with identified common needs, and Tier III provides supports to specific students with high levels of need. The MDRC study found improved attendance among elementary school students and improved graduation rates among high school students. Employing this targeted, tiered and integrated framework with fidelity resulted in students' receiving more support services, resulting in improvements in nonacademic outcomes.[clxxi]

Reducing Summer Learning Loss

Research reveals that students living in lower-income family circumstances can lose two to three months of academic learning over the summer. By the fifth grade, the cumulative effect of these losses can leave these students two to three years behind their more affluent peers.[clxxii] In 2015, the White House and the National Summer Learning Association launched the Summer Opportunity Project with the goal that by 2020 "every city, town and county in America will provide summer learning and jobs opportunities and summer meals to every young person who qualifies for free and reduced-price meals."[clxxiii]

Core practices advanced through this initiative include:

- *Get Lost in a Book*. Build broader library involvement, including through the distribution of books, access to e-books, and support for parents to promote summer reading.
- *Fuel Their Minds and Bodies*. Expand access to summer meals and settings that promote physical activity.
- *Hard Work Pays*. Provide access to work experiences in conjunction with the business sector, college counseling and literacy activities for middle and high school students.
- *The Power of Teams*. Expand a cadre of adult and peer mentors (including for STEM), promote summer service learning opportunities, and provide leadership development opportunities for students of color.
- *Anytime, Anywhere*. Create transportation passports, community technology hubs, and a digital batch program to recognize summer participation.[clxxiv]

In the summer of 2016, Charlotte participated in the Summer Opportunity Project by placing 360 young people in paid internships.[clxxv]

The BELL initiative (Building Educated Leaders for Life) has developed a summer program for at risk students and, in 2015, was expected to serve 4,500 North Carolina elementary and middle school students through a camp-like program designed to "boost" reading and math skills. These programs were offered in Charlotte, Durham, Winston-Salem and Wilmington.[clxxvi] Students enrolled in the Bell opportunity made significant progress in both reading and math skills through the 2014 summer learning program. Students scoring well below the academic benchmarks in reading and math gained about two months of skills over the summer through either reading or math instruction. Among students who received instruction in both reading and math, students made three months gain in mathematics.[clxxvii]

Promoting Educational Equity

Because grade retention disproportionally involves students with family and life conditions that place them at risk of lower levels of educational success (including race/ethnicity, poverty and chronic adversity),[clxxviii] focusing on educational equity is critical when seeking to promote educational success for *all* students.

This position was underscored as recently as February 2017 when the Council for Chief State School Officers issued the statement, "In an equitable education system, personal and social identifiers such as gender, race, ethnicity, language, disability, family background, and/or income are not obstacles to accessing educational opportunities; the circumstances children are born into do not predict their access to the resources and educational rigor necessary for success."[clxxix] The Council has identified 10 science- and evidence-informed practices that can guide state educational leaders to focus efforts on educational equity, including:

- *Prioritize Equity*: Set and communicate an equity vision and measurable targets.
- *Start from Within*: Focus on the state education agency.
- *Measure What Matters*: Create accountability for equity.
- *Go Local*: Engage Local Education Agencies (LEAs) and provide tailored and differentiated support.
- *Follow the Money*: Allocate resources to achieve fiscal equity.
- *Start Early*: Invest in the youngest learners.
- *Engage More Deeply*: Monitor equitable implementation of standards and assessments.
- *Value People*: Focus on teachers and leaders.
- *Improve Conditions for Learning*: Focus on school culture, climate, and social-emotional development.
- *Empower Student Options*: Ensure families have access to high-quality educational options that align to community needs.[clxxx]

More detail is available in Appendix A.

Establishing School District and Housing Coalitions

A series of community roundtables conducted by the Urban Institute revealed that housing counselors available to families experiencing residential instability or homelessness and school counselors seeking to address student absenteeism, behavioral or learning problems of individual students often did not know about each other's programs.[clxxxi] These roundtables identified a series of practices that could assist families facing housing challenges and, therefore, conditions of student mobility and instability, which can lead to school failure and grade retention. Practices included:

Practices that Build on Federal Supports:

- Compliance with McKinney-Vento requirements assuring that homeless students and those engaged with the child welfare foster care system be allowed to remain in their original schools, even if additional transportation is required
- Provision of tenants' rights education through federally-funded housing counseling organizations

- Creation of formal Continuums of Care to receive federal Housing and Urban Development support from the Supportive Housing Program, Shelter Plus Care Program, and Single-Room Occupancy program

Practices that Build on School District Programs

- Cross-district collaborations to identify families with high inter-district mobility histories
- Inclusion of housing issues as a standard element in absentee and truancy data collection and action
- More effective school, social service and housing linkages to assure appropriate data exchange, warm handoffs, and family and student success plan development.

Practices that Support School-Housing Partnerships

- Cross-training on the effects of student mobility and family housing instability on student attendance, behavior and academic performance
- Regularly scheduled interagency working groups
- Improved data sharing agreements and processes for interagency referrals and warm handoffs
- Expanded informal partnerships based on serving specific students and families[clxxxii]

VIII. Programs that Support Early Grade School Success

The online world of educational resources is awash with program descriptions of interventions designed to promote early grade success, thus reducing the likelihood of grade retention. Several compendia are useful in examining research results on specific programs. These are identified below for several domains of interest. The reader is advised to review results of specific programs across resource compendia as the research ratings on program-specific effectiveness can vary across specific interventions and over time.

Reading Interventions

Reading intervention research results are frequently organized around five components of literacy—phonemic awareness, phonics, fluency, comprehension, and vocabulary. Because there are many evidence-informed interventions within the reading domain, a group of comparative websites are provided below. The reader may then choose to look across and within sites to examine information on program purpose, effectiveness and replicability.

- ***Reading Rockets Invention Programs Comparative Charting***.[clxxxiii] This site provides information including grade appropriateness, instructional format and assessment resources for groups of reading interventions that have been reviewed by such rating entities as What Works Clearinghouse, the Florida Center for Reading Research, and the Best Evidence Encyclopedia.

- ***National Center on Intensive Intervention: Elementary School Reading***.[clxxxiv] This site provides information on the results of studies of reading intervention programs (and practices) including level of evidence, type of study and participants, program design, fidelity of implementation, and measures of outcome. In addition to research studies specific to an intervention, the site indicates whether the program has been reviewed by the What Works Clearinghouse.

- **The IRIS Center**.[clxxxv] This site, located at Vanderbilt University and Claremont Graduate University, identifies evidence-based instructional and intervention practices (and programs) for use in preservice preparation and professional development PreK-12 programs. IRIS then disseminates and offers trainings on those resources. Topics for which summaries are available include assessment, learning strategies, reading and literacy, and mathematics.

Mathematics Interventions

- **National Center on Intensive Intervention**.[clxxxvi] This site provides information on the results of studies of mathematics intervention programs (and practices) including level of evidence, type of study and participants, program design, fidelity of implementation, and measures of outcomes. In addition to research studies specific to an intervention, the site indicates whether the program has been reviewed by the What Works Clearinghouse.

- **University of Missouri Evidence-Informed Intervention Network: Mathematics**.[clxxxvii] This site provides math interventions focused on specific content areas linked with the type of problem being demonstrated by the student (i.e., acquisition, proficiency or generalization). Each intervention rated includes a summary brief for use at the school level.

- **Johns Hopkins University Best Evidence Encyclopedia**.[clxxxviii] This site includes top-rated elementary school instructional process mathematics along with website locations for each.

- **Hanover Research**.[clxxxix] This best practices site provides a review of the mathematics instruction literature and identifies the following as evidence-supported programs: Fraction Face-Off!; Hot Math Tutoring; Number Worlds; I CAN Learn Pre-Algebra and Algebra; DreamBox Learning; enVisionMATH; Do The Math.

- **The IRIS Center**.[cxc] This site, located at Vanderbilt University and Claremont Graduate University, identifies evidence-based instructional and intervention practices (and programs) for use in preservice preparation and professional development PreK-12 programs. IRIS then disseminates and offers trainings on those resources. Topics for which summaries are available include assessment, learning strategies, reading and literacy, and mathematics.

Appendix A. Ten Practices to Guide Educational Leadership in Educational Equity

The information included below is cited directly from the reference report, *Leading for Equity: Opportunities for State Education Chiefs*.[cxci]

Practice	Strategies and Action Steps
1. Prioritize Equity: Set and Communicate an Equity Vision and Measurable Targets *As part of setting the strategic vision and plan for the state's education system – and in collaboration with state boards of education, state legislatures, and governors – chiefs and their teams must analyze data to determine the greatest gaps and equity challenges and determine how they will focus efforts and allocate limited resources to address those gaps and their root causes.* (p. 6)	1.a. Make the case that equity benefits everyone in society. 1.b. Proactively initiate and lead conversations about equity. 1.c. Ensure that data is clear, accurate, and accessible to key stakeholders, with a focus on parents, legislators, and the media 1.d. Collect, disaggregate, analyze, and publicly share data on other indicators of long-term success. 1.e. Partner with stakeholders and other state actors to create urgency, establish public commitments, and set ambitious and achievable goals for addressing inequities in the state. 1.f. Assign state agency staff and allocate state agency funding to support data analysis and communications functions. 1.g. Once these commitments and goals have been established, chiefs should hold themselves and others in the state accountable for making progress, and celebrate success where it is achieved.
2. Start from Within: Focus on the State Education Agency *State education agencies (SEAs) can strategically reallocate funding and staff resources to further their mission of advancing equity. Historically, SEAs have been resourced to administer and monitor how the state spends federal and state education funds, and many SEAs are still structured with divisions that reflect these different funding streams…Even with limited authority, state chiefs can better equip SEA staff to be leaders for educational equity. (p. 8)*	2.a. Lead conversations on the impact of poverty on education and advocate for the resources students and families need. 2.b. Talk directly about issues of race and equity and prepare the senior leadership team to speak effectively and comfortably about race and racism. 2.c. Make equity an agency-wide priority by setting equity-related goals within and across divisions that are tied to the state's broader goals and strategies. 2.d. Consider restructuring SEA roles to prioritize equity. 2.e. Diversify SEA staff. 2.f. Target more SEA funding toward outreach and communications, with a focus on directly engaging low-income families and families of color and building partnerships with organizations that have closer ties to families and community leaders.

3. **Measure What Matters: Create Accountability for Equity**	3.a. Include measures of proficiency and progress and growth in the accountability system.
Designing and administering accountability systems is a core state responsibility with profound implications for equity. Accountability has multiple dimensions under state and federal law, including the design of school performance rating systems and oversight of evidence-based interventions in low-performing schools and schools with persistent and significant achievement gaps. In addition, ESSA requires greater transparency and public reporting so the public can hold system leaders accountable for equity. (p. 9)	3.b. Set ambitious and achievable interim and long-term goals for English learners and ensure they are making adequate progress achieving English language proficiency. 3.c. Collect data and report on school climate. 3.d. Analyze and publicly report rates of identification for special education services. 3.e. Ensure the accountability system is relevant and meaningful to parents, students, and other stakeholders. 3.f. Partner with LEAs to ensure school improvement efforts are targeted to community needs and strengths.
4. **Go Local: Engage Local Education Agencies (LEAs) and Provide Tailored and Differentiated Support**	4.a. Convene and build an ongoing dialogue with local leaders who hold different roles and perspectives on how to learn about promising practices and design new approaches to address inequity.
Education is largely a local enterprise, with local education agencies (LEAs)—districts, charters, or charter management organizations—leading education strategy, administration, and resource allocation. While governance structures and authority vary by state, state education leaders can provide guidance, support, funding, public pressure, and incentives to help LEAs close achievement and opportunity gaps based on local context…Closing opportunity and achievement gaps can only happen if state and local leaders understand and embrace their respective roles. (p. 12)	4.b. Provide targeted supports and guidance to districts to help teachers and leaders build and sustain excellent schools. 4.c. Encourage LEAs to explore and select culturally-relevant instructional materials and pedagogy that is aligned to state standards. 4.d. Highlight promising local practices for equity. 4.e. Require or incentivize participation in and funding for high-quality trainings that address the needs of the whole child. 4.f. Provide grants for innovative, local programs targeted at specific disadvantaged groups of students.
5. **Follow the Money: Allocate Resources to Achieve Fiscal Equity**	5.a. Advocate for equitable and adequate funding. 5.b. Offer fiscal guidance for LEAs on how to invest in high-leverage supports which are more likely to contribute to student academic success.
Funding for public education is a foundational state responsibility. Over the last several decades, many states have increased their share of public education funding, minimizing reliance	5.c. Monitor equitable distribution of local funds. 5.d. Prioritize coordination of public funding and services.

on local funds that are distributed unevenly and exacerbate inequality. In some states, funding has become more equitable in recent years, but states and districts still often invest less in educating low-income students and students of color than they do in educating affluent and white students. (p. 13)	
6. Start Early: Invest in the Youngest Learners *Many low-income students and students of color are already academically behind their peers when they start kindergarten A developmentally-appropriate, high-quality early learning experience aligned to standards uses play to help prepare young children to learn. State chiefs can make the case that equity requires expanding and targeting access to high-quality early childhood education (ECE) programs, and closing opportunity gaps for children growing up in low-income families; this is a critical strategy for improving the quality of K-12 education with a high return on investment.* (p. 14)	6.a. Advocate for increased funding for more children to attend high-quality pre-K. 6.b. Provide state funding, via formula or competitive grants, to improve the quality of publicly-funded pre-K programs tied to quality standards, and target areas with highest need. 6.c. Align pre-K/early learning standards to K-3 standards and provide professional development for pre-K and elementary school educators. 6.d. Modify suspension or expulsion policies for children in early childhood education programs and primary grades. 6.e. Prioritize trainings and resources on cultural and linguistic services for the early grades. 6.f. Engage in partnerships with related state agencies or divisions to ensure alignment across all programs.
7. Engage More Deeply: Monitor Equitable Implementation of Standards and Assessments *While most states are not directly responsible for the administration of schools or hiring educators, they do have an important role to monitor and oversee local actions. However, what happens in classrooms, hallways, and playgrounds has the greatest impact on students; chiefs must ensure all students receive an equitable education without micromanaging or overextending themselves.* (p. 16)	7.a. Monitor district course offerings and screening practices to determine whether low income students and students of color are being provided a college- and career-ready course of study 7.b. Remove financial barriers to college- and career-readiness. 7.c. Ensure that all students have access to high-quality instructional materials. 7.d. Check for bias in curriculum and assessment as part of state-level review of instructional materials, and assist LEAs in implementing strategies to detect bias in curriculum and assessment, particularly for locally-selected or designed materials. 7.e. Analyze the quality of assignments against rigorous standards and share learnings with LEAs.

	7.f. Align career and technical education (CTE) with industry needs and career-readiness standards, and link to industry-recognized credentials. 7.g. Ensure students with disabilities and English learners have access to accommodations in instruction and assessment.
8. Value People: Focus on Teachers and Leaders *In response to federal law, state chiefs have provided written assurance that low-income students and students of color will no longer be taught disproportionately by ineffective, inexperienced, or out-of-field teachers. Each state has already developed a plan to meet this assurance, but these plans can be strengthened. Implementation must be supported and aggressively monitored to ensure equitable access to effective teaching, and teachers must be prepared to teach our increasingly diverse student population.* (p. 19)	8.a. Determine where state equity plans have been successful, and celebrate this progress prominently to illustrate what is possible and to guide other systems. 8.b. Annually report on multiple indicators of the diversity of the educator workforce, including teachers, principals, and district leadership. 8.c. Analyze and monitor teacher licensure requirements and create new programs to increase diversity in the teaching profession. 8.d. Track and report on differential teacher retention and turnover rates. 8.e. Deliberately develop cultural competencies among aspiring and practicing educators so that educators are prepared to meet the needs of each student. 8.f. Initiate programs to ensure the school leadership pipeline prepares principals to lead in urban, rural, and other disadvantaged or hard-to-staff districts. 8.g. Provide necessary guidance, information, and funding to train educators in mental health supports and intervention strategies. 9.h. Provide funding for teacher training on restorative justice.
9. Improve Conditions for Learning: Focus on School Culture, Climate, and Social-emotional Development *Achieving equity means meeting the needs of every child, which includes providing a safe and supportive school environment, access to a well-rounded curriculum and appropriate technology, and regular examination of additional unmet needs. In addition to general culture and climate, there is a need to prioritize this work because students who are growing up in poverty are disproportionately exposed to trauma*	9.a. Measure and improve school culture as one important aspect of closing achievement gaps. 9.b. Work with LEAs to explore interventions to address chronic absenteeism. 9.c. Create a common framework and vocabulary for addressing students' social-emotional development and academic mindsets, and establish outcomes, measures, and benchmarks for schools to pursue. 9.d. Consider how best to integrate social-emotional development measures into state reporting and accountability systems, while acknowledging limitations of current measurement strategies.

and adverse childhood experiences (ACE) that affect their readiness to learn. (p. 20)	9.e. Invest in principals' ability to lead schools that support the whole child. 9.f. Integrate analysis of teachers' ability to teach social-emotional competencies into licensure requirements and teaching frameworks. 9.g. Revise exclusionary discipline policies and explore alternative strategies. 9.h. Advocate for the state to direct additional funding and technical assistance toward mental and physical health services to schools with the greatest need. 9.i. Provide incentives, competitive grants, or guidance to LEAs and local communities to design and offer school-based comprehensive services—such as community schools—to low-income communities and communities of color.
10. Empower Student Options: Ensure Families Have Access to High-quality Educational Options That Align to Community Needs *Student and parent agency is an important part of achieving educational equity. All students, regardless of their background, should have options regarding how and where they go to school, considering the needs of local communities.* (p. 23)	10.a. Streamline open enrollment policies across districts and across schools within the same district. 10.b. Incentivize inter-district choice programs that create more diverse schools. 10.c. Invest in high-quality distance and virtual learning options. 10.d. Subsidize the provision of transportation options for low-income families to access high-performing schools outside their community. 10.e. Consider examining admissions processes and criteria for specialized schools, including charter schools and magnet schools, to ensure that admissions requirements or assessments are not limiting opportunities for otherwise qualified students. 10.f. Support high-performing charter schools. 10.g. Consider promoting diversity in schools by helping districts analyze student assignment and transportation patterns. 10.h. Ensure all schools, including charters, are held accountable for providing high-quality education.

[i] *ACES Too High*. (n.d.). Retrieved January 10, 2017 https://acestoohigh.com/got-your-ace-score/
[ii] *Abut Adverse Childhood Experiences*, Violence Prevention. (n.d.). Centers for Disease Control and Prevention. Retrieved February 17, 2017 from https://www.cdc.gov/violenceprevention/acestudy/about_ace.html
[iii] *Academic Press*. (n.d.). The Hope Survey. Retrieved February 28, 2017. Retrieved from https://www.hopesurvey.org/what-were-measuring/academic-press

[iv] Communities in Schools. (n.d.). Proven Success. Retrieved on April 13, 2017 from https://www.communitiesinschools.org/our-model/#proven-success

[v] *Institute for Educational Leadership and the Coalition for Community Schools. (n.d.). FAQs about Community Schools*. Retrieved April 10, 2017 from http://www.communityschools.org/aboutschools/faqs.aspx

[vi] Gary T. Henry, G., Barrett, N. & Marder, C. (2016). "Double-Dosing" in Math in North Carolina Public Schools. Retrieved from https://ies.ed.gov/ncee/edlabs/regions/southeast/pdf/rel_2016140.pdf

[vii] National Conference of State Legislatures. (2017). Third Grade Reading Legislation. Retrieved from http://www.ncsl.org/research/education/third-grade-reading-legislation.aspx

[viii] Capellinia, S., Portes de Cerqueira Césara, A. & Germano, G. (2014). Early identification of reading problems: preliminary study with students of 1st grade. *Procedia - Social and Behavioral Sciences*. 174(2015) 1351 – 1355. Retrieved from http://ac.els-cdn.com/S1877042815008101/1-s2.0-S1877042815008101-main.pdf?_tid=1ade9f4e-195d-11e7-bbcc-00000aab0f6b&acdnat=1491327513_d0e79a1bf403fe854d9c0e42ffb365f7

[ix] Fiester, L. (2012). *Don't "DYS" Our Kids: Dyslexia and the Quest for Grade-Lebel Reading Proficiency*. Tremaine Foundation and the Campaign for Grade-Level Reading. Retrieved from http://blogs.edweek.org/edweek/speced/Tremaine_DYS_r12.pdf

[x] Sparks, S., Dropout Indicators Found for 1st Graders. (2013). *Ed Week*. Retrieved from http://www.edweek.org/ew/articles/2013/07/29/37firstgrade.h32.html

[xi] *Leading for Equity: Opportunities for State Education Chiefs*. (2017). Aspen Institute and the Council of Chief State School Officers. Retrieved from http://www.aspendrl.org/portal/browse/DocumentDetail?documentId=2967&download&admin=2967%7C120234082

[xii] Adapted from Stark, D. and Shannon Moodie, M. (2009). *Family* Engagement*, Diverse Families, and Early Childhood Education Programs: An Integrated Review of the Literature.* PreK NOW and the National Association for the Education of Young Children. Retrieved from https://www.naeyc.org/files/naeyc/file/research/FamEngage.pdf

[xiii] Adapted from Stark, D. and Shannon Moodie, M. (2009). *Family* Engagement*, Diverse Families, and Early Childhood Education Programs: An Integrated Review of the Literature.* PreK NOW and the National Association for the Education of Young Children. Retrieved from https://www.naeyc.org/files/naeyc/file/research/FamEngage.pdf

[xiv] *3rd Grade Reading Retention: A Closer Look at North Carolina's Literacy Law*. (2015). Ed Week. Retrieved from http://blogs.edweek.org/edweek/curriculum/2015/10/3rd_grade_reading_retention_closer_look_north_carolina_literacy_law.html

[xv] *2016 State of the Science: Implicit Bias Review.* (2016). The Kirwin Institute for the Study of Race and Ethnicity, Ohio University. Retrieved from http://kirwaninstitute.osu.edu/my-product/2016-state-of-the-science-implicit-bias-review/

[xvi] Hathaway, B. (2016). Implicit bias may help explain high preschool expulsion rates for black children. *Yale News*. Retrieved from http://news.yale.edu/2016/09/27/implicit-bias-may-help-explain-high-preschool-expulsion-rates-black-children

[xvii] Sandstrom, H. & Huerta, S. (2013). *The Negative Effects of Instability on Child Development: A Research Synthesis*. Retrieved from http://www.urban.org/sites/default/files/publication/32706/412899-The-Negative-Effects-of-Instability-on-Child-Development-A-Research-Synthesis.PDF

[xviii] Anderson, K. and Emig, C. (2014). *Integrated Student Supports: A Summary of the Evidence Base for Policymakers.* Retrieved from https://www.childtrends.org/wp-content/uploads/2014/02/2014-05ISSWhitePaper3.pdf

[xix] *K-3 Literacy: Read to Achieve.* (n.d.). North Carolina Department of Public Instruction. Retrieved February 23, 2017 from http://www.dpi.state.nc.us/k-3literacy/achieve/

[xx] *3rd Grade Reading Retention*, op cit.

[xxi] *An Act to Modify the Current Operations and Capital Improvements Appropriations Act of 2011 and for other Purposes*. (2011). P. 39. General Assembly of North Carolina. Retrieved from http://www.dpi.state.nc.us/docs/k-3literacy/achieve/hb950.pdf

[xxii] Student Mobility: How It Affects Learning. (2016). *Education Week*. Retrieved from http://www.edweek.org/ew/issues/student-mobility/

[xxiii] Hernandez-Tutop, J. (2012). *Social Promotion or Grade Repetition: What's Best for the 21st Century Student*, ERIC Education Archives. Retrieved from http://files.eric.ed.gov/fulltext/ED532287.pdf

[xxiv] Association for Applied Behavior Analysis. (n.d.). *Multi-Tiered Systems of Supports for Behavior: Training Provider Opportunity.* Retrieved April 15, 2017 from https://www.abainternational.org/media/75609/mtssanncmnt.pdf

[xxv] RtI Action Network. (n.d.). *What is RtI?* Retrieved April 15, 2017 from http://www.rtinetwork.org/learn/what/whatisrti

[xxvi] Schwerdt, G. and West, M. (2013). *The Effects of Test-Based Retention on Student Outcomes over Time: Regression Discontinuity Evidence from Florida*. Harvard University Program on Education Policy and Governance Working Papers Series. Retrieved from https://www.hks.harvard.edu/pepg/PDF/Papers/PEPG12-09_West.pdf

[xxvii] Lynch, M. *The True Costs of Social Promotion and Retention*. (2014). International Journal of Progressive Education. Retrieved from http://www.inased.org/v10n3/ijpev10n3.pdf

[xxviii] National Conference of State Legislatures, *Third Grade Reading Legislation*, op cit.

[xxix] *The Effects of Test-Based Retention*, op cit.

[xxx] Cannon, J. and Lipscomb, S. (2011). *Early Grade Retention and Student Success: Evidence from Los Angeles.* Public Policy Institute for California. Retrieved from http://www.ppic.org/content/pubs/report/R_311JCR.pdf

[xxxi] *Essential Questions about Grade Retention*, (2016). About Education. Retrieved from: http://teaching.about.com/od/pd/a/School-Retention.htm

[xxxii] *Early Warning! Why Reading by the End of Third Grade Matters.* (2010). Annie E Casey Foundation. http://www.aecf.org/m/resourcedoc/AECF-Early_Warning_Full_Report-2010.pdf

[xxxiii] Smith, M. and Shepard, L. (1988). *Kindergarten Readiness and Retention: A Qualitative Study of Teachers' Beliefs and Practices*. American Educational Research Journal. Retrieved from http://nepc.colorado.edu/files/KindergartenReadiness.pdf

[xxxiv] *The scarring effects of primary grade retention?,* op cit.

[xxxv] *The scarring effects of primary grade retention?,* op cit.

[xxxvi] Andrew, M. 2014. *The scarring effects of primary grade retention? A study of cumulative advantage in the educational career*. Social Forces 93(2) 653-685. Oxford University Press.

[xxxvii] *The True Costs of Social Promotion and Retention*, op cit.

[xxxviii] *New Research Suggests Repeating Elementary School Grades — Even Kindergarten — is Harmful*. (2014). The Hechinger Report. Retrieved from http://educationbythenumbers.org/content/new-research-failing-students_2034/

[xxxix] Anderson, G.E., Jimerson, S.R., and Whipple, A.D. (2005). *Students' Ratings of Stressful Experiences at home and school: Loss of a parent and grade retention as superlative stressors.* Journal of Applied School Psychology 21(1):1-20*. Background: Adverse Childhood Experiences.* (n.d.). Children's Health Fund. Retrieved February 7, 2017 from https://www.childrenshealthfund.org/wp-content/uploads/2017/01/Health-Barriers-to-Learning-Background.pdf

[xl] *The Effects of Test-Based Retention*, op cit.

[xli] North Carolina early grade retention in the age of accountability. (2003). Partners in Research Forum. Frank Porter Graham Child Development Institute, University of North Carolina. http://prim.ncwiseowl.org/UserFiles/Servers/Server_4501234/File/retention_brief.pdf

[xlii] *Education Data: Education Spending Per Student by State* (2016). Governing. Retrieved from http://www.governing.com/gov-data/education-data/state-education-spending-per-pupil-data.html

[xliii] *Position Statement on Student Grade Retention and Social Promotion*. (2003). National Association for School Psychologists. Retrieved from: http://www.cdl.org/articles/position-statement-on-student-grade-retention-and-social-promotion/

[xliv] *Position Statement on Student Grade Retention and Social Promotion*, op cit.

[xlv] Lynch, M. The True Costs of Social Promotion and Retention. (2014). International Journal of Progressive Education. Retrieved from http://www.inased.org/v10n3/ijpev10n3.pdf

[xlvi] Schorr, L. (2007). *Pathway to Children Ready for School and Succeeding at Third Grade*. Retrieved from: http://first5shasta.org/wp-content/uploads/2013/07/PathwayFramework9-07.pdf

[xlvii] University of Michigan. (2007). *Born to lose: How birth weight affects adult health and success*. Retrieved from: http://ns.umich.edu/new/releases/5882-born-to-lose-how-birth-weight-affects-adult-health-and-success

[xlviii] Schorr, L., *Pathway to Children Ready for School and Succeeding at Third Grade*, op cit.

[xlix] American Speech-Language-Hearing Association (n.d.). *Effects of Hearing Loss on Development*. Retrieved April 4, 2017 from http://www.asha.org/public/hearing/Effects-of-Hearing-Loss-on-Development/

[i] American Optometric Association. (n.d.). *A Look at Reading and Vision: A Look at Reading and Vision*. Retrieved April 4, 2017 from http://www.aoa.org/patients-and-public/resources-for-teachers/a-look-at-reading-and-vision?sso=y

[ii] Asthma and Allergy Foundation of America. (n.d.). *Asthma Facts and Figures: Research*. Retrieved January 21, 2017 from http://www.aafa.org/page/asthma-facts.aspx

[iii] National Maternal and Child Oral Health Center. (n.d.). *Oral Health and Learning: When Children's Oral Health Suffers, So Does Their Ability to Learn*. Retrieved January 30, 2017 from https://www.mchoralhealth.org/PDFs/learningfactsheet.pdf

[iv] *Characteristics of Children with Learning Disabilities*. (n.d.). National Association of Special Education Teachers. Retrieved February 23, 2017 from http://www.naset.org/fileadmin/user_upload/LD_Report/Issue__3_LD_Report_Characteristic_of_LD.pdf

[v] Part C Early Intervention for Infants and Toddlers: Percentage Eligible Versus Served. (2013). Pediatrics. Retrieved from http://pediatrics.aappublications.org/content/131/1/38

[vi] *Drop Out Indicators Found for 1st Grade*, op cit.

[vii] Lynch, M. *The True Costs of Social Promotion and Retention*. (2014). International Journal of Progressive Education. Retrieved from http://www.inased.org/v10n3/ijpev10n3.pdf

[viii] Comey, J., Litschwartz, S. & Pettit, K. (2012). *Housing and Schools: Working Together to Reduce the Negative Effects of Student Mobility*. Retrieved from http://www.urban.org/sites/default/files/publication/32761/412701-Housing-and-Schools-Working-Together-to-Reduce-the-Negative-Effects-of-Student-Mobility.PDF

[ix] Sandstrom, H.& Huerta, S., *The Negative Effects of Instability on Child Development: A Research Synthesis*, op cit.

[x] Sandstrom, H.& Huerta, S., *The Negative Effects of Instability on Child Development: A Research Synthesis*, op cit.

[xi] *Early Warning! Why Reading by the End of Third Grade Matters*, op cit.

[xii] Strickland, D. (2006). Early Literacy: Policy and Practice in the Preschool Years, Reading Rockets, undated. Retrieved January 14, 2017, p. 1 http://www.readingrockets.org/article/early-literacy-policy-and-practice-preschool-years

[xiii] *A Matter of Equity: Preschool in America.* (2015). United States Department of Education, Retrieved from https://www2.ed.gov/documents/early-learning/matter-equity-preschool-america.pdf

[xiv] Moore, K.A. and Emig, C. (2014). *Integrated Student Supports: A Summary of the Evidence Base for Policymakers*. Retrieved from https://www.childtrends.org/wp-content/uploads/2014/02/2014-05ISSWhitePaper1.pdf

[xv] Communities in Schools. (n.d.). Proven Success. Retrieved on April 13, 2017 from https://www.communitiesinschools.org/our-model/#proven-success

[xvi] Ladd, H., Muschkin, C. and Dodge, K. (2013). *From Birth to School: Early Childhood Initiatives and Third-Grade Outcomes in North Carolina.* Journal of Policy Analysis and Management. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/pam.21734/full

[xvi] Muschkin, C.G., Ladd, H.F., & Dodge, K.A. (2015). *Impact of North Carolina's Early Childhood Initiatives on Special Education Placements in Third Grade.* Education Evaluation and Policy Analysis. Retrieved from http://journals.sagepub.com/stoken/rbtfl/rro4HwVYfIeHc/full

[xvii] *Impact of North Carolina's Early Childhood Programs and Policies,* op cit.

[xviii] *Impact of North Carolina's Early Childhood Programs and Policies,* op cit.

[xix] Cooper, H. (2003). *Summer Learning Loss: The Problem and Some Solutions*. ERIC Clearinghouse on Elementary and Early Childhood Education Champaign IL. Retrieved from http://files.eric.ed.gov/fulltext/ED475391.pdf

[xx] *Early Warning! Why Reading by the End of Third Grade Matters* (2010). Annie E. Casey Foundation: Baltimore, MD. Retrieved from: http://www.aecf.org/m/resourcedoc/AECF-Early_Warning_Full_Report-2010.pdf

[xxi] Cooper, H. (2003). *Summer Learning Loss: The Problem and Some Solutions.* ERIC Clearinghouse on Elementary and Early Childhood Education Champaign IL. Retrieved from http://files.eric.ed.gov/fulltext/ED475391.pdf

[xxii] Allington, R., McGill-Franzen, A. (2012). *Summer Reading: Closing the Rich-Poor Reading Achievement Gap*, Teachers College Press. Retrieved from: http://bookharvestnc.org/why-books/statistics/

[xxiii] Present, Engaged, and Accounted For: The Critical Importance of Addressing Chronic Absence in the Early Grades. (2008). National Center for Children and Poverty. Retrieved from http://www.nccp.org/publications/pdf/text_837.pdf

[lxxiv] Leffert, N., Benson, P., L., & Roehlkepartain, J. L. (1997). *Starting out right: Developmental assets for children.* Minneapolis, MN: Search Institute.

[lxxv] Lynch, M. The True Costs of Social Promotion and Retention. (2014). International Journal of Progressive Education. Retrieved from http://www.inased.org/v10n3/ijpev10n3.pdf

[lxxvi] *Early Grade Retention and Student Success*, op cit.

[lxxvii] Davoudzadeh, P., McTernan, M. and Grimm, K. (2015). *Early school readiness predictors of grade retention from kindergarten through eighth grade: A multilevel discrete-time survival analysis approach*. Early Childhood Research Quarterly. Retrieved from
https://www.researchgate.net/publication/275773542_Early_school_readiness_predictors_of_grade_retention_from_kindergarten_through_eighth_grade_A_multilevel_discrete-time_survival_analysis_approach

[lxxviii] *Early school readiness predictors of grade retention from kindergarten through eighth grade*. op cit.

[lxxix] Davoudzadeh, P., McTernan, M. and Grimm, K. (2015). *Early school readiness predictors of grade retention from kindergarten through eighth grade: A multilevel discrete-time survival analysis approach*. Early Childhood Research Quarterly. Retrieved from
https://www.researchgate.net/publication/275773542_Early_school_readiness_predictors_of_grade_retention_from_kindergarten_through_eighth_grade_A_multilevel_discrete-time_survival_analysis_approach

[lxxx] *Early Grade Retention and Student Success*, op cit.

[lxxxi] *Early school readiness predictors of grade retention from kindergarten through eighth grade*, op cit.

[lxxxii] *The Impact of Adverse Childhood Experiences (ACES) and Resilience on Disparities in School Performance and Health: Preliminary Research Results from Washington State*. (2016). Collaborative on Health and the Environment. Retrieved from https://www.healthandenvironment.org/

[lxxxiii] *The True Costs of Social Promotion and Retention*, op cit.

[lxxxiv] *Early Warning! Why Reading by the End of Third Grade Matters*, op cit.

[lxxxv] *What are the Risk Factors for Grade Retention*? (2011). Pediatric Education. Retrieved from
https://pediatriceducation.org/2011/10/31/what-are-risk-factors-for-grade-retention/

[lxxxvi] *Early school readiness predictors of grade retention from kindergarten through eighth grade*, op cit.

[lxxxvii] Leffert, N., Benson, P., L., & Roehlkepartain, J. L. (1997). *Starting out right: Developmental assets for children.* Minneapolis, MN: Search Institute.

[lxxxviii] McNeely, C., Nonnemaker, J., & Blum, R. (2002). Promoting school connectedness: Evidence from the National Longitudinal Study of Adolescent Health. Journal of School Health, 72, 138–146.

[lxxxix] Schaps, E. (2005). *The role of supportive school environments in promoting academic success*. Published in Getting Results: Developing Safe and Healthy Kids, Update 5 (Chapter 3). Retrieved from:
https://www.collaborativeclassroom.org/research-articles-and-papers-the-role-of-supportive-school-environments-in-promoting-academic-success

[xc] *Social Support, Academic Press, and Student Achievement: A View from the Middle Grades in Chicago*. (1999). University of Chicago Consortium on School Research. Retrieved from
https://consortium.uchicago.edu/publications/social-support-academic-press-and-student-achievement-view-middle-grades-chicago

[xci] *Initiatives from Preschool to Third Grade: A Policymaker's guide*. (2014). Education Commission of the States.

[xcii] *Early Childhood Comprehensive Systems.* (n.d.). Health Resources and Services Administration, Maternal and Child Health Division. Retrieved February 23, 2017 https://mchb.hrsa.gov/earlychildhoodcomprehensivesystems

[xciii] Gruendel, J. Rethinking the Governance of Early Childhood Systems: When Brain Science Meets Public Policy. (2015). Institute for Child Success. Retrieved from
https://www.instituteforchildsuccess.org/publication/rethinking-governance-early-childhood-systems/

[xciv] Bright from the Start. (n.d.). The Georgia Department of Early Care and Learning. Retrieved February 24, 2017 from http://decal.ga.gov/

[xcv] Massachusetts Department of Early Education and Care. (n.d.). Retrieved February 23, 2017 from
http://www.mass.gov/edu/government/departments-and-boards/department-of-early-education-and-care/

[xcvi] Washington State Department of Early Learning. (n.d.). Retrieved February 24, 2017 from
https://www.del.wa.gov/

[xcvii] Pennsylvania Department of Human Services. (n.d.). *Office of Child Care and Early Learning*. Retrieved February 24, 2017 from http://www.dhs.pa.gov/citizens/childcareearlylearning/index.htm

xcviii Office of Early Childhood. (n.d.). State of Connecticut. Retrieved February 23, 2017 from http://www.ct.gov/oec/site/default.asp

xcix Kate B. Reynolds Charitable Trust. (n.d.). *Great Expectations*. Retrieved April 8, 2017 from http://www.kbr.org/content/great-expectations

c *Getting to Great: Kate B. Reynolds Great Expectations Activation Plan*. (2015). Retrieved from http://www.kbr.org/sites/default/files/GreatExpectationsActivationPlan2Download.pdf

ci Kate B. Reynolds Charitable Trust. (n.d.). *Great Expectations*. Retrieved April 8, 2017 from http://www.kbr.org/content/great-expectations

cii Great Expectations. (2017). *Overview*. Retrieved from https://greatexpectationsforsyth.org/overview/

ciii *The Forth Promise*. (n.d.). Retrieved April 13, 2017 from http://www.forsythpromise.org/

civ *The Forsyth Promise 2016 Annual Report*. (2016). Retrieved from https://static1.squarespace.com/static/556f0f6ee4b040bf8bd7a813/t/57bb262cc534a5058e5f5ae1/1471882804313/The+Forsyth+Promise+2016+Report.pdf

cv Center for Promise. (n.d.). *East Durham Children's Initiative: Making accelerated progress for East Durham's children.* Retrieved on April 9, 2017 from https://www.americaspromise.org/sites/default/files/EastDurham_CaseStudyFinal_0.pdf

cvi Duke Center on Child and Family Policy. (2016). *ECDI Impact Summary*. Retrieved from http://files.edci.org/stories/our-biggest-summer-yet/EDCI_Impact_Summary_2016_Final.pdf

cvii East Durham Children's Initiative. (2017). EDCI Early Childhood Programs Profiled in Child Trends Report. Retrieved from http://edci.org/stories/edci-early-childhood-programs-profiled-in-child-trends-report?lang=en

cviii Maxwell, K., LaMonte, L., & Halle, T. (2017). Building our Future: Supporting Community-Based Early Childhood Initiatives. Child Trends. Retrieved from https://www.childtrends.org/wp-content/uploads/2017/02/2017-15BuildingOurFuture.pdf

cix The Opportunity Task Force. (2017). *Chapter 1: The* Context. A Wake-Up Call for Charlotte-Mecklenburg. Retrieved from https://leadingonopportunity.org/report/chapter-1/

cx The Opportunity Task Force. (2017). *Leading on Opportunity: Executive Summary*. Retrieved from https://leadingonopportunity.org/introduction/executive-summary/

cxi The Opportunity Task Force. (2017). *Leading on Opportunity: Recommendations Matrix*. Retrieved from https://leadingonopportunity.org/appendix/recommendations-matrix/

cxii Sarlo, R. (n.d.). *Early Warning Systems: Moving from Reaction to Prevention*. Retrieved January 28, 2017, from http://www.rtinetwork.org/learn/rti-in-secondary-schools/early-warning-systems-moving-from-reaction-to-prevention

cxiii *EWS 101: Introduction to the Five Core Components of an Early Warning System*. (2016). Regional Educational Laboratory (REL) Network Learning Series on Early Warning Systems. Retrieved from https://ies.ed.gov/ncee/edlabs/pdf/EWSWebinar101.pdf

cxiv Baltimore Education Research Consortium. (2011). *Destination Graduation: Sixth Grade Early Warning Indicators for Baltimore City Schools, Their Prevalence and Impact*. Retrieved from http://www.baltimore-berc.org/pdfs/SixthGradeEWIFullReport.pdf

cxv *Building Strong Brains*. (2016). Tennessee's ACEs Initiative. Retrieved from https://www.tn.gov/assets/entities/dcs/attachments/ACEs_PROJECTS_FUNDED_FOR_FY17.pdf

cxvi MDRC. (2016) *Addressing Early Warning Indicators: Interim Impact Findings from the Investing in Innovation (i3) Evaluation of DIPLOMAS NOW*. Retrieved from https://www.mdrc.org/sites/default/files/DiplomasNow%203rd%202016.pdf

cxvii American Institutes for Research. (n.d.). *AIR's EWS Online Tool*. Retrieved January 28, 2017, from http://www.earlywarningsystems.org/tools-supports/

cxviii Zellman, G. and Kilburn, M.R. (2015). A Comprehensive Approach to Early Education. *The RAND Blog*. Retrieved from http://www.rand.org/blog/2015/11/a-comprehensive-approach-to-early-education.html

cxix Zellman, G. and Kilburn, M.R. (2015). *The Hawai'i Preschool-Third Grade Education Reform Initiative: How Well Did P–3 Work?* Retrieved from http://www.rand.org/pubs/research_briefs/RB9866.html

cxx *P-3: Research and Evaluation*, op cit.

cxxi *Framework for Planning, Implementing, and Evaluating PreK-3rd Grade Approaches*. (2013). National P-3 Center. Retrieved from http://depts.washington.edu/pthru3/PreK-3rd_Framework_11x17.pdf

[cxxii]National P-3 Center. (n.d.). *P-3 Approaches: North Carolina.* Retrieved February 23, 2107 from http://depts.washington.edu/pthru3/approaches/summary/36

[cxxiii] *National P-3 Center*. (n.d.). University of Washington. Retrieved on February 23, 2017 from http://depts.washington.edu/pthru3/node/1

[cxxiv] P-3: Research and Evaluation. (n.d.). National P-3 Center. Retrieved February 23, 2017. http://depts.washington.edu/pthru3/content/research-evaluation'

[cxxv] Duncan, G. et al. (2007). School Readiness and Later Achievement. *Developmental Psychology*. 45(6), 1428-1446. Retrieved from https://www.documentcloud.org/documents/838411-school-readiness-study-greg-duncan-et-al.html

[cxxvi] Mongeau, L. (2013). Early math matters: Top researcher discusses his work, *Ed Source*. Retrieved April 16, 2017 from https://edsource.org/2013/early-math-matters-top-researcher-discusses-his-work/50061

[cxxvii] National Conference of State Legislatures. (2016). *2015 Kindergarten through Third Grade Education Legislation*. Retrieved from http://www.ncsl.org/research/education/2015-kindergarten-through-third-grade-education-legislation.aspx#Mathematics

[cxxviii] The Boston Basics. (2016). *Count, Group and Compare*. Retrieved from http://boston.thebasics.org/en/the-basics/count-group-and-compare/

[cxxix] Piasta, S., Pelatti, C. & Miller, H. (2014). Mathematics and Science Learning Opportunities in Preschool Classrooms. *Early Education and Development*. 25(4): 445–468. Retrieved April 16, 2017 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4256529/

[cxxx] North Carolina Department of Public Instruction. (n.d.). *Standard Course of Study for Mathematics*. Retrieved April 16, 2017 from http://maccss.ncdpi.wikispaces.net/North+Carolina+Standard+Course+of+Study+for+Mathematics

[cxxxi] North Carolina Department of Public Instruction, *Standard Course of Study for Mathematics*, op cit.

[cxxxii] Public Schools of North Carolina *Newsroom*. (2015). NC Proficiency Standards Among the Highest in the Nation. Retrieved from http://www.ncpublicschools.org/newsroom/news/2015-16/20150709-02

[cxxxiii] Henry et al., *"Double-Dosing" in Math in North Carolina Public Schools*, op cit.

[cxxxiv] Henry et al., *"Double-Dosing" in Math in North Carolina Public Schools*, op cit.

[cxxxv] Public Schools of North Carolina Newsroom. (2015). NC's 4th Grade NAEP Reading Scores Climb in 2015, 4th Grade Math Scores Hold Steady, 8th Grade Scores Drop. Retrieved from http://www.ncpublicschools.org/newsroom/news/2015-16/20151028-01

[cxxxvi] North Carolina Department of Public Instruction. (2003). *North Carolina End-of-Grade Test—Grade 3 Mathematics*. Retrieved from http://www.ncpublicschools.org/docs/accountability/testing/eog/2003scstestgr3mathtis.pdf

[cxxxvii] North Carolina Department of Public Instruction. (2016). *2015–16 Performance and Growth of North Carolina Public Schools: Executive Summary*. Retrieved from http://www.dpi.state.nc.us/docs/accountability/reporting/exsumm16.pdf

[cxxxviii] *Family Engagement, Diverse Families, and Early Childhood Education Programs*, op cit.

[cxxxix] Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkens, A. S., & Closson, K. (2005). *Why do parents become involved? Research findings implications*. The Elementary School Journal, 106(2), 105-130. Cited within *Family Engagement, Diverse Families, and Early Childhood Education Program,* op cit.

[cxl] *2016 State of the Science: Implicit Bias Review*, op cit.

[cxli] *How Discrimination Shapes Parent-Teacher Communication*. (2017). The Atlantic. Retrieved from https://www.theatlantic.com/education/archive/2016/11/which-parents-are-teachers-most-likely-to-contact/507755/

[cxlii] Hutchinson, D. (2015). 'Continually Reminded of Their Inferior Position': Social Dominance, Implicit Bias, Criminality, and Race. Washington University Journal of Law and Policy, 46, 23–115. Retrieved from https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2562110

[cxliii] Sheng, F., Han, X., and Han, S. (2016). *Dissociated Neural Representations of Pain Expressions of Different Races*. Cerebral Cortex, 26(3), 1221–1233. https://www.ncbi.nlm.nih.gov/pubmed/25576533

[cxliv] Okonofua, J. A. and Eberhardt, J. L. (2015). Two Strikes: Race and the Disciplining of Young Students. Psychological Sciences. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/25854276

[cxlv] Todisco, M. (2015). *Share and Share Alike? Considering Racial Discrimination in the Nascent Room-Sharing*

Economy. Stanford Law Review Online, 67, 121–129. Retrieved from
https://www.stanfordlawreview.org/online/share-and-share-alike/

cxlvi Implicit Bias. (2016). *State of the Science: Implicit Bias Review*. Kirwin Institute. Retrieved from
http://kirwaninstitute.osu.edu/wp-content/uploads/2016/07/implicit-bias-2016.pdf

cxlvii *2016 State of the Science: Implicit Bias Review,* op cit.

cxlviii *Family Engagement, Diverse Families, and Early Childhood Education Programs*, op cit.

cxlix *Initiatives from Preschool to Third Grade: A Policymaker's guide*, op cit.

cl Carlisle, E., Stanley, L., and Kemple, K. M. (2005). *Opening doors: Understanding school and Family influences on family involvement.* Early Childhood Educational Journal, 33(3), 155-162. Retrieved from
https://link.springer.com/article/10.1007/s10643-005-0043-1

cli *Family Engagement, Diverse Families, and Early Childhood Education Programs*, op cit.

clii Flaugher, P. (2006). *Two dimensions of parent participation in an inner school district*. Education and Urban Society, 38, 248-261. Retrieved from
http://journals.sagepub.com/doi/abs/10.1177/0013124505284292?journalCode=eusa

cliii Sohn, S., & Wang, C., (2006). *Immigrant parents' involvement in American schools: Perspectives from Korean mothers.* Early Childhood Education Journal, 34(2), 125-132. Retrieved from
https://eric.ed.gov/?id=EJ747273

cliv *US: Trump's Immigration Actions to Harm Millions*. (2017). Human Rights Watch. Retrieved from
https://www.hrw.org/news/2017/01/25/us-trumps-immigration-actions-harm-millions

clv *Compendium of Parenting Interventions*, op cit., p. 3

clvi *Compendium of Parenting Interventions*, op cit., p. 3

clvii Sohn, S., & Wang, C., (2006). *Immigrant parents' involvement in American schools: Perspectives from Korean mothers.* Early Childhood Education Journal, 34(2), 125-132. Retrieved from
https://eric.ed.gov/?id=EJ747273

clviii *Early Warning! Why Reading by the End of Third Grade Matters,* op it.

clix For example, see *Reading Intervention Programs: A Comparative Chart*. (n.d.). Reading Rockets. Retrieved on April 15, 2017 from http://www.readingrockets.org/pdfs/Reading-intervention-programs-chart.pdf

clx Institute of Educational Sciences What Works Clearinghouse. (2009). *Practice Guide: Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades*. Retrieved from https://ies.ed.gov/ncee/wwc/PracticeGuide/3

clxi National Council of Teachers of Mathematics. (2014). *Principles to Actions: Ensuring Mathematical Success for All*. Retrieved from http://www.nctm.org/store/Products/Principles-to-Actions--Ensuring-Mathematical-Success-for-All/

clxii National Council of Teachers of Mathematics. (2014). *Principles to Actions: Executive Summary*. Retrieved from http://www.nctm.org/uploadedFiles/Standards_and_Positions/PtAExecutiveSummary.pdf

clxiii Institute of Educational Sciences What Works Clearinghouse. (2009). *Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools.* Retrieved April 16, 2017

clxiv Hanover Research. (2014). *Best Practices in Math Interventions*. Retrieved from
https://www.mbaea.org/documents/filelibrary/numeracy/Best_Practices_in_Math_Intervention_53D80FEED7650.pdf

clxv Hanover Research, *Best Practices in Math Interventions*, op cit., pp. 3-4

clxvi Moore, K. and Emig, C., *Integrated Student Supports*, op cit.

clxvii Parise, L. and Hossain, F. (2017). *Using Research Evidence to Strengthen Support for At-Risk Students: A Case Study of Communities In Schools.* Retrieved from http://mdrc.org/publication/using-research-evidence-strengthen-support-risk-students

clxviii Moore, K. and Emig, C., *Integrated Student Supports*, op cit.

clxix Moore, K. and Emig, C., *Integrated Student Supports*, op cit.

clxx Parise, L. and Hossain, F., *Using Research Evidence to Strengthen Support for At-Risk Students: A Case Study of Communities In Schools,* op cit.

clxxi Parise, L. and Hossain, F., *Using Research Evidence to Strengthen Support for At-Risk Students: A Case Study of Communities In Schools,* op cit.

clxxii National Summer Learning Association. (n.d.). *Smarter Summers, Brighter Futures*. Retrieved April 16, 2017 from http://www.summerlearning.org/

clxxiii White House and National Summer Learning Association. (2015). *Summer Opportunity Project*. Retrieved from http://www.summerlearning.org/summer-opportunity-project/

clxxiv White House and National Summer Learning Association, *Summer Opportunity Project,* op cit.

clxxv *Forbes*. (2016). How The White House Is Helping Stem The Summer Opportunity Gap. Retrieved from https://www.forbes.com/sites/gradsoflife/2016/02/26/how-the-white-house-is-helping-stem-the-summer-opportunity-gap/#a72293a37a28

clxxvi Bell--Building Educated Leaders for Life. (2015). *BELL & Partners To Launch Summer Learning Programs For 4,500 Scholars in North Carolina*. Retrieved from http://www.experiencebell.org/news/bell-partners-launch-summer-learning-programs-4500-scholars-north-carolina

clxxvii Bell, *BELL & Partners To Launch Summer Learning Programs For 4,500 Scholars in North Carolina,* op cit.

clxxviii *What are the Risk Factors for Grade Retention*? (2011). Pediatric Education. Retrieved from https://pediatriceducation.org/2011/10/31/what-are-risk-factors-for-grade-retention/

clxxix *Leading for Equity*, op cit. p. 6

clxxx Leading for Equity, op cit. p. 7

clxxxi Comey et al, *Housing and Schools: Working Together to Reduce the Negative Effects of Student Mobility*, op cit.

clxxxii Comey et al, *Housing and Schools: Working Together to Reduce the Negative Effects of Student Mobility*, op cit.

clxxxiii Reading Rockets. (n.d.). *Reading Intervention Programs: A Comparative Chart.* Retrieved April 15, 2017 from http://www.readingrockets.org/article/reading-intervention-programs-comparative-chart

clxxxiv National Center on Intensive Intervention. (n.d.). *Academic Intervention*. Retrieved April 15, 2017 from http://www.intensiveintervention.org/chart/instructional-intervention-tools

clxxxv The IRIS Center. (n.d.). *Evidence-Based Practice Summaries*. Retrieved April 15, 2017 from https://iris.peabody.vanderbilt.edu/ebp_summaries/

clxxxvi National Center on Intensive Interventions. (n.d.). *Academic Intervention: Math*. Retrieved April 16, 2017 from http://www.intensiveintervention.org/chart/instructional-intervention-tools?grade=elementary&subject=math'

clxxxvii University of Missouri. (n.d.). *Evidence-Based Intervention Network: Mathematics*. Retrieved April 16, 2017 from http://ebi.missouri.edu/?page_id=805

clxxxviii Johns Hopkins University. (n.d.). *Best Evidence Encyclopedia: Elementary School Mathematics*. Retrieved April 16, 2017 from http://www.bestevidence.org/math/elem/top.htm

clxxxix Hanover Research, *Best Practices in Math Interventions*, op cit.

cxc The IRIS Center. (n.d.). *Evidence-Based Practice Summaries*. Retrieved April 15, 2017 from https://iris.peabody.vanderbilt.edu/ebp_summaries/

cxci *Leading for Equity*, op cit.