ADDRESSING THE IMPACT OF COVID-19 ON SCHOOL READINESS:

Virginia's publicly funded preschools

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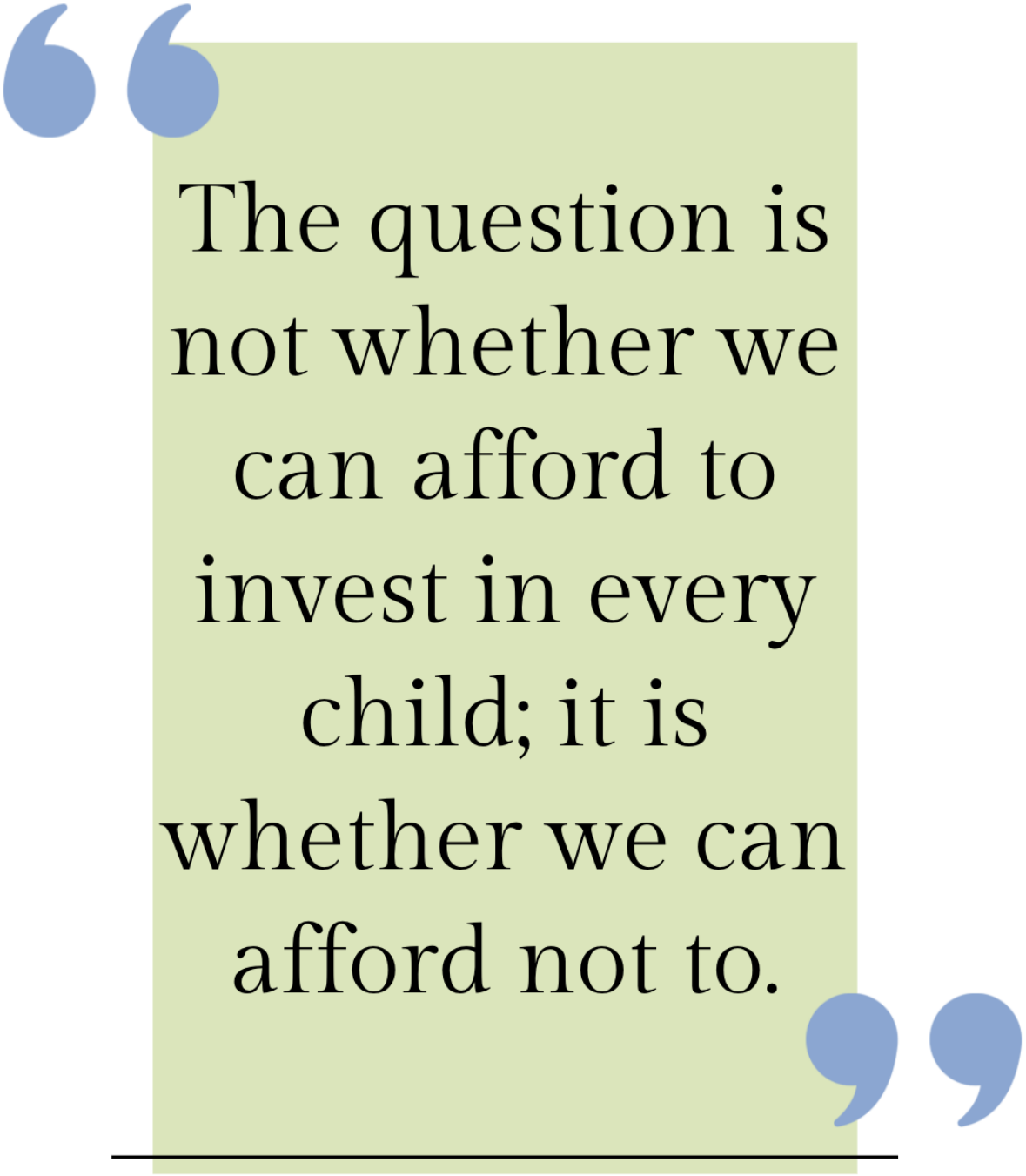
for The Virginia Department of Education's Division of School Readiness

UVA | FRANK BATTEN SCHOOL of LEADERSHIP and PUBLIC POLICY

VIRGINIA DEPARTMENT OF EDUCATION



MARIAN WRIGHT EDELMAN

DISCLAIMER:

The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgements and conclusions are solely those of the author and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

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DEDICATION:

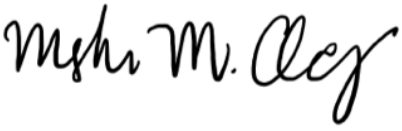
This work is dedicated to my family, without whom I would not have been able to persevere through all the obstacles we faced on my way here. To my mother, Madone Clancy for instilling in me a love of reading which paid off as I poured through several hours of research, some more than once. To my father, Steven Clancy, who instilled in me a strong work ethic and sense of humor which helped make the endless hours of work a bit easier to manage. To my three brothers, I wouldn't be half of who I am without always trying to keep up with you all, thank you for never taking it easy on me...behind you! Finally, thank you, to my niblings (Rowan, Evelyn, Lydia, and Bennett) whose smiles and laughter helped break up the stressful hours putting this thing together. Never give up on your goals!

INTRODUCTION:

The purpose of this report is to motivate action on the part of the Division of School Readiness (DSR) of the Virginia Department of Education to address the impact of the COVID-19 pandemic on declining enrollment in the Commonwealth's publicly funded preschools. To these ends, the author developed this report over eight months as a student consultant for the DSR. Under the guidance of faculty at the Frank Batten School of Leadership and Public Policy, the author completed an extensive literature review on potential solutions to address the impact of declining enrollment and lost in-person instruction time and then conducted a policy analysis. While this initial policy problem motivated the DSR's concerns, declining enrollment resulted from Governor Northam's mandated school closures and subsequent reopening plans that shifted most modes of instruction to virtual or remote instruction. Subsequently, school divisions reopening plans varied and significantly impacted the decisions of Virginia families regarding their Early Childhood Care and Education arrangements over the past year. Data analysis of Virginia Fall Membership (Enrollment) Data revealed disparities regarding student race/ethnicity, socioeconomic status, and English learning status. Combined these concerns motivated the equity-focused approach to the policy development, analysis, and implementation processes that follow.

HONOR PLEDGE:

On my honor I have neither given nor received unauthorized aid on this assignment.



LIST OF ACRONYMS:

ACE: Adverse Childhood Experience

ARP: American Recovery Plan

AY: Academic Year

CAP: Center for American Progress

CBRS: Child Behavior Ratings Scale

DSR: Division of School Readiness

E3: Elevate Early Education

ECCE: Early Childhood Care and Education

ED: Economically Disadvantaged

EIRI: Early Intervention Reading Initiative

EL: English Learning

K: Kindergarten

K-12: Kindergarten through 12th Grade

KG: Kindergarten

PALS: Phonological Awareness Literacy Screening

- **PALS-K:** PALS for Kindergarten
- **PALS-PreK:** PALS for pre-Kindergarten

PK: pre-Kindergarten

SEL: Social-Emotional Learning

SES: Socioeconomic Status

UVA: University of Virginia

VDOE: Virginia Department of Education

VKRP: Virginia Kindergarten Readiness Program

VPI: Virginia Preschool Initiative

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EXECUTIVE SUMMARY:

The pandemic exposed pre-existing inequities in nearly every aspect of life. Early Childhood Care and Education (ECCE) is no exception. In the spring of 2020, the Virginia Department of Education (VDOE) was one of the first states in the nation to close 2,134 schools across its 132 divisions impacting nearly 1.3 million students and their families across the Commonwealth (*See Table 1*). However, not all households and students were impacted equally. Data from the VDOE's fall membership[1] report reveals that enrollment in Virginia's publicly funded pre-Kindergartens declined by 19 percent while K-12 enrollment only dropped by 4 percent (*See Table 1*). What is especially concerning is that students who stand to benefit the most from these high-quality ECCE experiences– students from low-income households, English learning students, as well as Black and Hispanic students–were disproportionately "missing" from enrollment numbers for the 2019-2020 Academic Year (AY). However, even among students who *were enrolled* in these programs, these same populations were more likely to be learning virtually than their whiter, wealthier peers (*See Figure 12*). This creates the potential to explode the pre-existing equity gaps and the resulting readiness gaps.

In response to these disparities, the VDOE's DSR is interested in tackling the impacts that loss of in-person instruction time has on both school readiness and long-term academic success for all Virginia students, but particularly for these sub-populations of PK students who were both overrepresented in enrollment declines and overrepresented in virtual learning because they are the very populations that research shows stand to benefit the most from participation in high-quality ECCE programs.
The following policy report examines these disparities and seeks to provide an understanding of potential educational interventions that can help to mitigate the immediate and long-term impacts that both declining enrollment and loss of in-person instruction time may have on these cohorts of young learners. To these ends, the first part of this report lays out both the national and state-specific context and background of the issue using publicly available data to illustrate the disparities in access to and participation in high-quality, in-person ECCE instruction throughout the past AY.

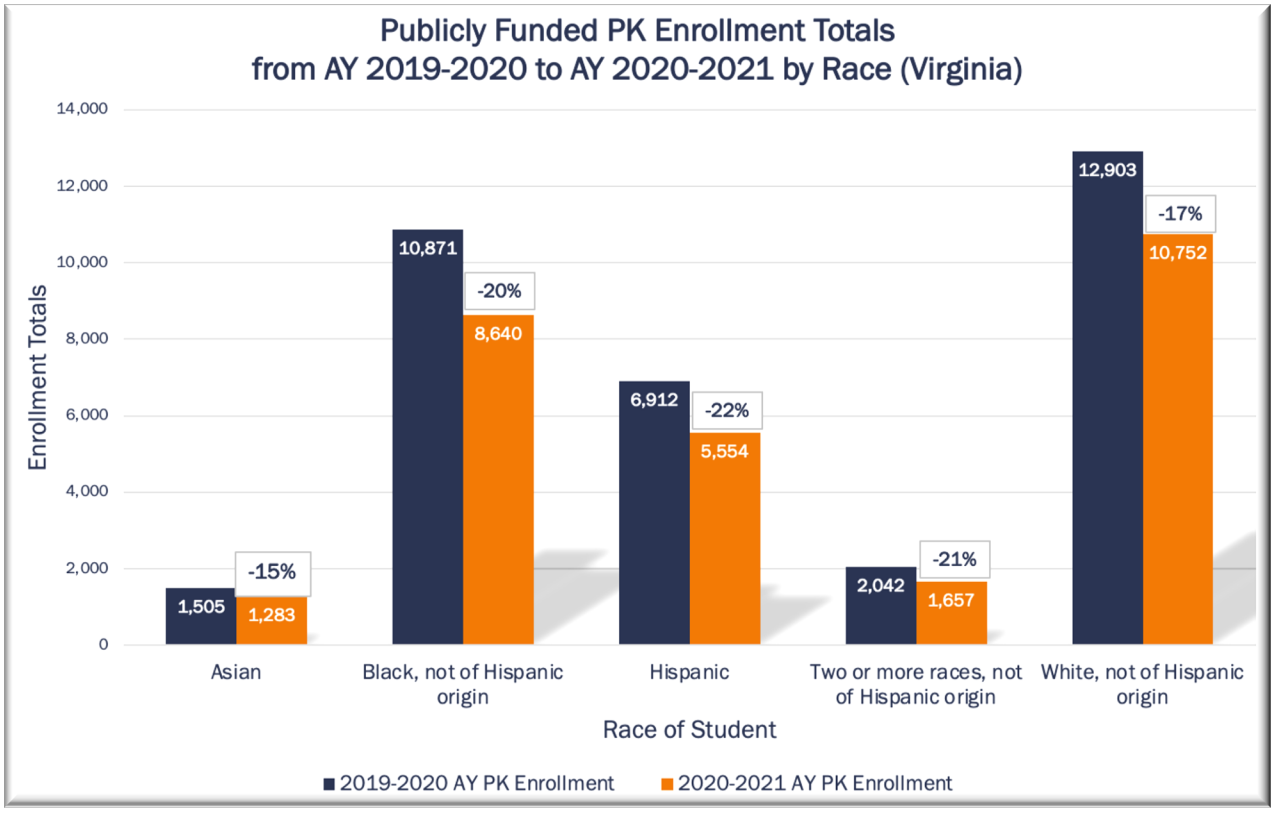
The second half of the report considers the consequences of inaction and potential educational interventions to mitigate such impacts. This is done through a consideration of the cost and consequences of the issue to motivate the need for prioritizing this policy problem. This is followed by an extensive literature review that considers potential interventions to address the impact of declining enrollment and virtual learning on school readiness and long-term academic success. All of this context informs the evaluative criteria, policy alternatives, and ultimate recommendation. As a result of the evaluation herein, I recommend expanding the existing Early Intervention Reading Initiative program to pre-K students in publicly funded ECCE programs to address the extent of literacy learning loss that occurred over the past year. Research makes clear that intervening early, rather than later, in students' academic careers reaps the most benefits (*See Figure 8*).

[1] This dataset consists of enrollment totals for Virginia's public schools; grades PK-12.

PROBLEM DEFINITION:

Due to COVID-19's impact on both enrollment declines and mode of instruction in Virginia's publicly funded preschools, too many of Commonwealth's youngest learners have and continue to miss out on high-quality, in-person, early learning experiences that research shows are critical for school readiness and future academic success. As a result, too many pre-Kindergarteners (PK) and would-be Kindergarteners[2] are not meeting school readiness benchmarks. Importantly, Black, Hispanic, Economically Disadvantaged (ED)[3], and English Learners (EL)[4] are overrepresented both in students "missing"[5] from Virginia's publicly funded preschools and those learning virtually–instead of in-person–during the 2020-2021 Academic Year (AY) which creates the potential of increasing equity gaps in educational opportunities.

Figure 1. Fall Membership (enrollment) Data for the 2019-2020 and 2020-2021 AYs for Publicly funded Pre-Kindergarten by Race



[2] Students who were eligible, but not *required* to enroll in public kindergarten for the 2020-2021 Academic Year.
[3] Defined by VDOE if meeting one of the following: 1) is eligible for Free/Reduced Meals, or 2) received TANF, or 3) is eligible for Medicaid, or 4) identified as either Migrant or experiencing Homelessness.
[4] VDOE does not disaggregate data on English Learners by primary/households language so there is a diversity of experiences within ELs that is missing in the context of this report.
[5] Students whose families likely would have but did not enroll them in a publicly funded preschool program for the 2020-2021 AY.

CLIENT OVERVIEW:

The Virginia Department of Education's (VDOE) Division of School Readiness (DSR) seeks to prepare all Virginia children for kindergarten by supporting birth to five ECCE programs. Disproportionate declines in Virginia's publicly funded preschools, like Head Start and the Virginia Preschool Initiative (VPI), by race/ethnicity and socioeconomic status (SES) are particularly concerning because these programs serve a disproportionate share of students who research shows stand to benefit the most from participation in high-quality ECCE programs (Bassok, 2010). Historically, this includes students from economically disadvantaged (low-income) households, Black and Hispanic students, and English Learners (ELs) (*Four-Year-Olds Served by Virginia Preschool Initiative | KIDS COUNT Data Center*, 2020). For these reasons, the VDOE's DSR plays a central role in assessing and mitigating the extent of the impact of the pandemic on incoming preschoolers through rigorous and targeted educational interventions. To these ends, the DSR can utilize three levers for policy intervention–funding, influencing relevant stakeholders to act, and/or regulating future standards and actions.

BACKGROUND AND CONTEXT:

DECLINING ENROLLMENT

Between the 2019-2020 and 2020-2021 AYs public school (K-12) enrollment dropped by nearly three percent nationally in response to school closures and subsequent shifting modes of instruction in response to COVID-19 public health mitigation measures (Kamenetz et al., 2020). However, most of these declines are drove by significant drops in enrollment in the earliest grades–PK and KG–which averaged about 20 and 16 percent, respectively (Shapiro & Bassok, 2021). Early reports indicate that parents of preschoolers are particularly motivated to delay enrolling their child depending on the mode of instruction offered in their school district. This impact is evident because school districts that offered no in-person instruction experienced substantial enrollment declines relative to those that provided at least some hybrid or in-person instruction (*See Figure* 12) (Agostinelli et al., 2020; Barnett & Jung, 2021; Shapiro & Bassok, 2021). Importantly, the implications of these enrollment drops vary greatly dependent on the alternative ECCE arrangements young learners experienced instead of these high-quality, publicly funded programs (Agostinelli et al., 2020; Anguiano et al., 2020; Barnett & Jung, 2021). These nuances are vital considerations for ensuring effective policy interventions.

Enrollment in Virginia's publicly funded preschool was no exception. PK enrollment in public preschools and kindergartens declined nearly 19 and 13 percent respectively between the 2019-2020 and 2020-2021 AYs (*See Figure 2*) (*VDOE: Fall Membership Data*, 2020). While these aggregated declines are on par with the national average for both child and household characteristics reveals a more compelling story. Concerningly, enrollment drops in PK were significantly more among students from ED households (*See Figure 3*). Black and Hispanic students were also less likely to be enrolled in these programs respective to their white peers (*See Figure 1*). However, the opposite occurred in Virginia's KG in that white and wealthier families not enrolling at higher rates than ED, Black, and Hispanic students (*See Figure 4).* While KG is not the focus of this report, the context is relevant for understanding the motivation for centering equity in our recommendation. In PK, the most significant drop was a decline of 50 percent among students identified as English Learners (EL)[6] as compared to an 18 percent decline for students not identified as EL (*See Figure 5*). This disproportionate PK enrollment declines, along dimensions of race/ethnicity and SES, has the potential to widen the pre-existing readiness gap in education that stems from inequitable access to high-quality ECCE programs (Ladson-Billings, 2006; Rothstein, 2020).

[6] Defined by the Virginia Department of Education as a student "who was not born in the United States or whose native language is one other than English" s*ee VDOE Fall Membership Data Dictionary for more information.*

Figure 2. Fall Membership (enrollment) Data for the 2019-2020 and 2020-2021 AYs for Virginia's Publicly funded Pre-Kindergarten and Kindergarten

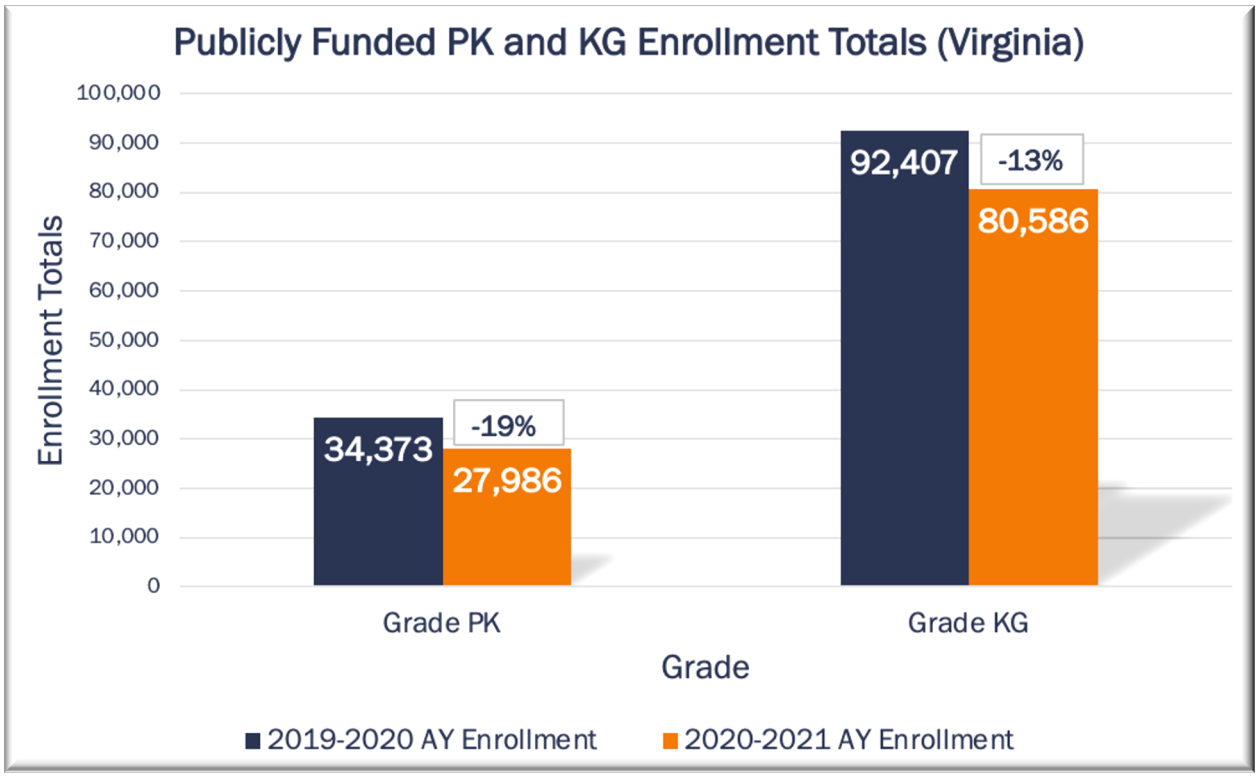
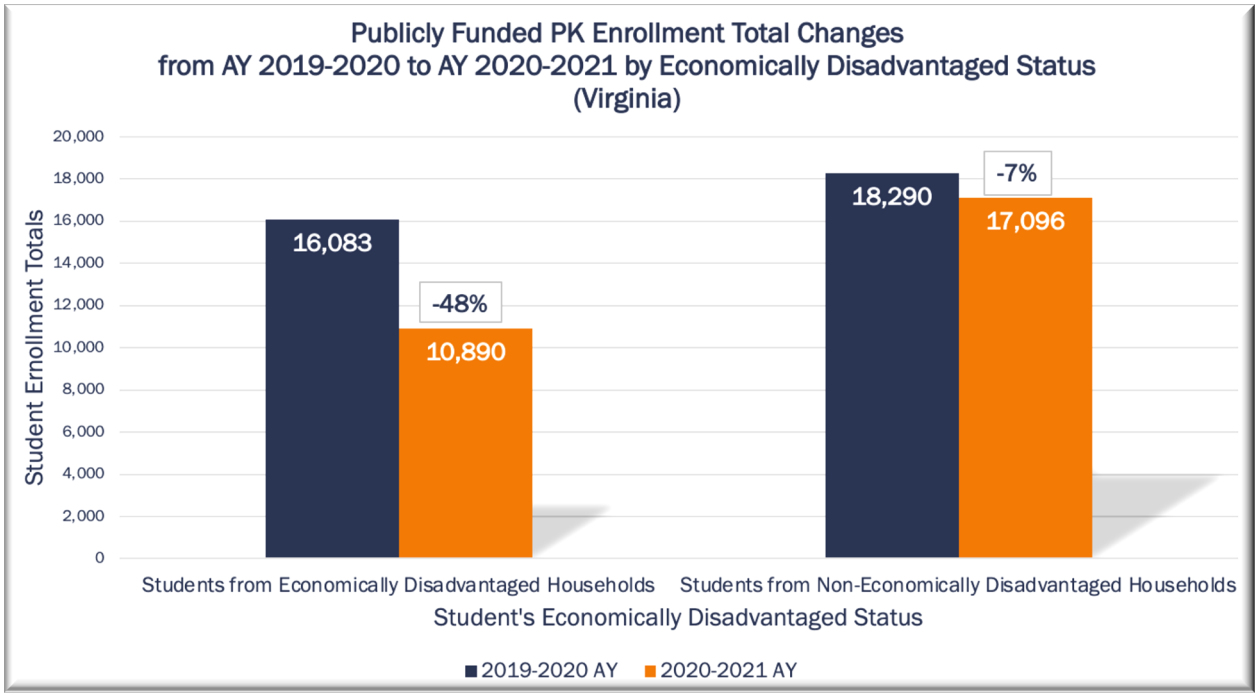


Figure 3. Fall Membership (enrollment) Data for the 2019-2020 and 2020-2021 AYs for Virginia's Publicly funded Pre-Kindergarten by Student's Economically Disadvantaged Status



SCHOOL READINESS IN VIRGINIA

The VDOE's DSR recently reported that rates of school readiness[7] significantly declined (*See Table 2*) for students enrolled. For comparison, in fall 2020 forty-five percent of kindergarteners started school without mastering one or more skills, identified by the Virginia Kindergarten Readiness Program (VKRP) as critical to school readiness and later academic success (Lane, 2021). This rate is even higher (56%) among students identified as ED ("Understanding the Readiness Gap," 2020) and a substantial increase from 34 percent of students pre-pandemic ("VKRP," 2019). Both enrollment and readiness drops are most prominent in literacy and driven by those students more likely to be "missing" from high-quality ECCE programs: Black, Hispanic, EL, and ED students who were also more likely to have been assessed virtually (*See Appendix A*) (*Classroom Quality, Interactions, and K-Readiness*, 2020; McGinty et al., 2021). Fifty-five percent of the spring 2020 Phonological Awareness Literacy Screening (PALS) were conducted virtually and reflect similar trends as those students tested in person (McGinty et al., 2021). Specifically, for the Phonological Awareness Literacy Screening for fall 2020 kindergarteners (PALS-K), twenty-seven percent tested below the school readiness benchmark–which is a ten percentage point increase from fall 2019 (Masters et al., 2021). Also, PALS did not assess PK students in spring 2020. These circumstances, combined, suggest the true estimate of students not meeting school readiness benchmarks in fall 2021 will be much higher than currently anticipated.

VIRGINIA'S PUBLICLY FUNDED PRESCHOOLS

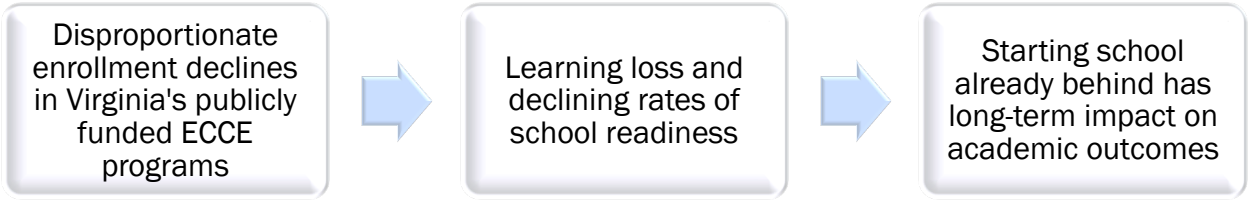
Initiated by the Elevate Early Education (E3)[8], the Virginia Kindergarten Readiness Program (VKRP)–in partnership with the VDOE and the Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia (UVA)–is an initiative focused on promoting a comprehensive understanding of school readiness and its impact on future academic success. Combining SEL, math, and literacy screenings, VKRP identifies the level of support need to promote academic success. Specifically, these assessments include the Phonological Awareness Literacy Screening (PALS), the Child Behavior Rating Scale (CBRS) which measures social-emotional learning (SEL) and skills, and the Early Mathematic Assessment System (EMAS). A strong indicator on students' performance on these assessment is participation in high-quality ECCE programs (James, 2020; Karoly, 2016).

[7] School readiness refers to a set of skills that students possess when they enter KG, including academic and non-academic skills that research shows are predictive of later academic success.

[8] E3 is a statewide bipartisan issue-advocacy organization dedicated to promoting comprehensives, evidence-based ECCE interventions to promotes school readiness and academic success.

COSTS AND CONSEQUENCES OF NOT ADDRESSING DISPARATE ENROLLMENT DECLINES: A THREAT TO SCHOOL READINESS

DISPARATE IMPACTS OF DECLINING ENROLLMENT AND VIRTUAL INSTRUCTION:



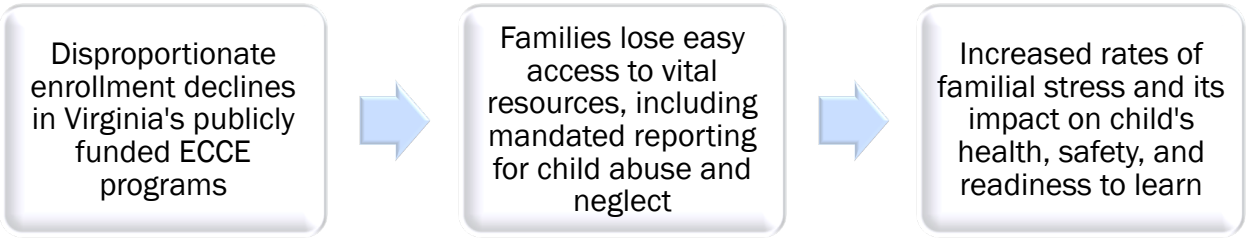
School closures and subsequent modes of instruction, nationally, have disproportionately impacted students in low-income neighborhoods where Black and Hispanic students are overrepresented (*See Figure 12*) relative to their white peers (Shapiro & Bassok, 2021). Research shows that online learning is an inadequate substitute, particularly for preschoolers (Agostinelli et al., 2020; Mader, 2017), students from low-income households (Agostinelli et al., 2020), as well as Black, Hispanic, and EL students (Bassok, 2010). Disparate access to high-quality ECCE opportunities results in divergent rates of school readiness and subsequent academic achievement (Frede & Barnett, 2011). However, a review of the recent trends found that while the racial "achievement gap" has narrowed over the last decade, the socioeconomic gap (the academic achievement between children from high- and low-income households) widened by about 40 percent between the 1970s and the 1990s (S. Reardon, 2011). The impact of high-quality ECCE experiences is especially salient for students from ED households who are one-and-a-half times more likely to be school ready if they attend a publicly funded preschool relative to their peers who have not experienced any preschool (Loeb & Bassok, 2007). The income-achievement gap remains throughout K-12, indicating that it is present upon kindergarten entry and persists (Loeb & Bassok, 2007; S. F. Reardon & Portilla, 2016). A more recent study by the CAP identified this gap widens as large as 48 percent of low-income children are kindergarten-ready relative to 75 percent of their moderate to high-income peers (Ewen & Herzfeldt-Kamprath, 2016). Since these populations are both less likely to have enrolled in a publicly funded program and more likely to have attended virtually, these costs and consequences are essential considerations.

Declining enrollment in high-quality publicly funded preschool is particularly concerning because it is unclear where students are learning and being cared for instead. Notably, only ten percent of ECCE programs in the United States are considered high-quality (Troe, 2016). Inadequate federal funding for high-quality, in-person, publicly funded ECCE programs leaves six out of seven income-eligible preschoolers without access to programs that promote school readiness (Giannarelli et al., 2019). Recent reports from the Center for American Progress (CAP) and the Brookings Institute confirmed that access to high-quality ECCE programs is both limited and strongly correlated to a child's

race/ethnicity (Rothwell, 2016) and socioeconomic background (Ewen & Herzfeldt-Kamprath, 2016). Strikingly, data from the National Center for Early Development and Learning confirms that there are 18 states, including Virginia, that demonstrate a statistically significant difference between the preschool enrollment rates for white and Black students, about a 0.55 standard deviation (*See Figure 7*) (Hardy & Huber, 2020; Rothwell, 2016). In Virginia, publicly funded programs serve only about 24 percent of eligible students as of 2019 (Troe, 2016). This reality is concerning because disparate access contributes to widen the pre-existing equity and readiness gaps in ECCE.

For those students either not enrolled or learning virtually, the primary concern for recent declines in enrollment is the learning loss that results from disparities in access to in-person instruction (Yoshikawa et al., 2020). If enrollment declines are left unaddressed, learning losses will persist, resulting in immediate drops in school readiness (Williams & Lerner, 2019). Essentially, beginning school already behind has long-term negative impacts on graduation rates, the likelihood of participation in illegal behaviors, special education placement, lifetime earnings, and health outcomes (McCoy et al., 2017; Camilli et al., 2010; Gory 2001; Chetty et al., 2011). Several studies specifically focus on ECCE participation's impact on lifetime earnings (Chetty et al., 2011; Troe 2018; Sanchez 2017) one, in particular, finding an association of 25 percent increase in average annual income by age 34 and increased likelihood of falling into the top income quartile (Reynolds et al., 2019).

DECLINING ENROLLMENT AND THE LOSS OF RESOURCES MAY INCREASE FAMILIAL STRESS:



An additional–more immediate–consequence of declining enrollment is the loss of resources and supports that can have substantial and long-term impacts on students and their family's overall well-being (Barr, 2018; Bethell et al., 2014; Council (US) & Medicine (US), 2004; Ragavan & Randell, 2020). These resources include home visits, well-being checks on students for signs of abuse and neglect, early intervention for special needs, and promoting the foundation for healthy eating and level of physical activity (Council (US) & Medicine (US), 2004; Gaylor et al., 2019). Feeling emotionally and physically safe is vital for young children's health and social-emotional development (Alzahrani et al., 2019). Overall well-being also impacts academic performance and other long-term outcomes (Ho & Funk, 2018; McCormick et al., 2015). High-quality ECCE programs provide vital interventions and screen for adverse childhood experiences (ACEs) and promote health equity which in turn impacts future success (Council (US) & Medicine (US), 2004; Raker et al., 2020; Promoting Health Equity Through Early Care and Education, 2019). In response to the loss of these resources, household stress levels can increase and–if prolonged–can have adverse impacts on cognitive development in ways that

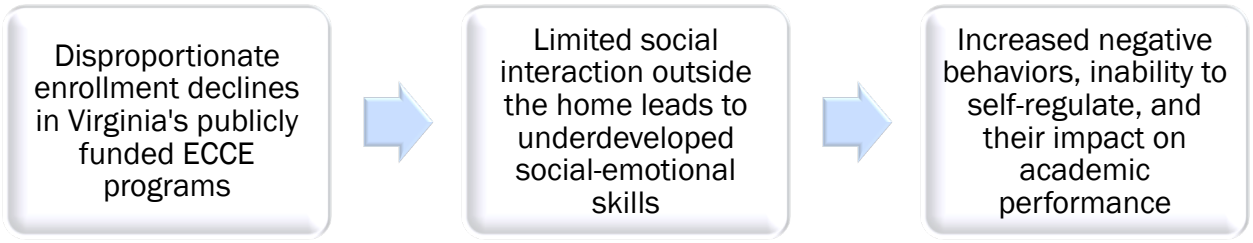
limit later learning (Magnuson & Duncan, 2016). Mitigating these potential long-term levels of toxic stress is a central concern for addressing access to high-quality ECCE programs for all of Virginia's children.

ECCE programs contribute to school readiness rates which, in the long run, is predictive of academic success that is determined to improved adult health outcomes (Fiscella & Kitzman, 2009). Several studies show that severe and prolonged stress results in changes in brain circuitry which contributes to subsequent detrimental effects on both physical and mental health (Ragavan & Randell, 2020; Holden Nixon, 2012; Yoshikawa et al., 2020). Importantly, toxic levels of stress result from chronic neglect, physical or emotional abuse, caregiver substance abuse or mental illness, and the accumulated burdens of family economic hardship in the absence of adequate supports (Williams & Lerner, 2019). These family factors are proven to be critical drivers of children's health and academic success (Council (US) & Medicine (US), 2004). Without access to the supports and resources that high-quality ECCE programs provide, many of Virginia's young learners are at risk of suffering from both immediate and long-term harmful physical- and/or mental health outcomes. While these costs are less direct and more difficult to quantify, they are important considerations.

A study of the residual impacts of the 2005 earthquake in Pakistan that forced schools closures for three and a half months found that four years post-event young children[9] who lived closer to the fault line at the time were the equivalent of 1.5 years behind their peers who lived further away. Importantly children whose mothers had completed primary education and lived closer to the fault line were seemingly protected against the "test score gap" that existed for their peers who lived in the same area but whose mother did not complete primary education. The result is an estimated 15 percent decline in lifetime earnings for these students, likely because they returned to school already behind their peers whose schooling continued uninterrupted (Andrabi et al., 2020). This research exploited a natural experiment to establish a causal relationship between the effect of the disaster and targeted relief for those living closest to the earthquake fault line. Further, it compared differences between those within the fault line relative to parental level of education. As a result, the effects of the earthquake on student performance can be isolated and thus deemed causal. Alongside the impacts evident post-Katrina (discussed later in this report) it is clear that the pandemic will have lasting effects on students' readiness and ability to learn in both immediate and long-term. Given these outcomes, the DSR must seek to mitigate the magnitude of the disparate impact that COVID-19 has on students from diverse backgrounds with targeted interventions..

[9] Defined as those in their first thousand days of life.

DECLINING ENROLLMENT AND VIRTUAL INSTRUCTION DECREASE OPPORTUNITIES FOR SOCIAL-EMOTIONAL LEARNING



Another related immediate and long-term concern resulting from enrollment declines is the loss of social interactions for young children during a critical time in their social-emotional development (CDC, 2020; Schindler et al., 2015; Williams & Lerner. 2019). In addition to cognitive skills, a strong predictor of school readiness is self-regulation and social, emotional, and motor skills necessary for learning new concepts (Mosley, 2020). Without in-person participation, students miss out on critical SEL that stems from positive, high-quality teacher-students interactions which promote communication skills, self-regulation, and conflict resolution (Alzahrani et al., 2019), all of which are predictive of future academic success (Alzahrani et al., 2019). High-quality ECCE programs reduce problem behaviors and emotional distress that can interfere with learning and increase disruptive behaviors (Alzahrani et al., 2019; Guglielmo & Tryon, 2001; Payton et al., 2008). Starting school without one or more of these SEL skills contributes to increased rates of high school dropout and other negative academic and lifetime outcomes (Bridgeland et al., 2013).

ECCE programs that address and focus on trauma-informed SEL interventions contribute to school readiness rates and are predictive of improved adult health outcomes (Bethell et al., 2014; Fiscella & Kitzman, 2009). Importantly, toxic levels of stress result from chronic neglect, physical or emotional abuse, caregiver substance abuse or mental illness, and the accumulated burdens of family economic hardship in the absence of adequate supports (Williams & Lerner, 2019). Family factors such as these are definitively critical drivers of children's overall health and ability to learn (Bethell et al., 2014; Fiscella & Kitzman, 2009; Kuhfeld et al., 2020). Early findings show that COVID-19 has increased the likelihood of children experiences trauma and stress (Ragavan & Randell, 2020). Thus, it is essential that VDOE, through the CBRS, assess the extent to which students are affected to mitigate its impact on school readiness. While these costs are less direct and more difficult to quantify, they are important considerations.

BROADER COST CONSIDERATIONS ASSOCIATED WITH DECLINING ENROLLMENT

> "This crisis has laid bare how dependent our entire economy is on access to affordable, high-quality child care,"
> **- Fatima Goss Graves, President of the National Women's Law Center.**

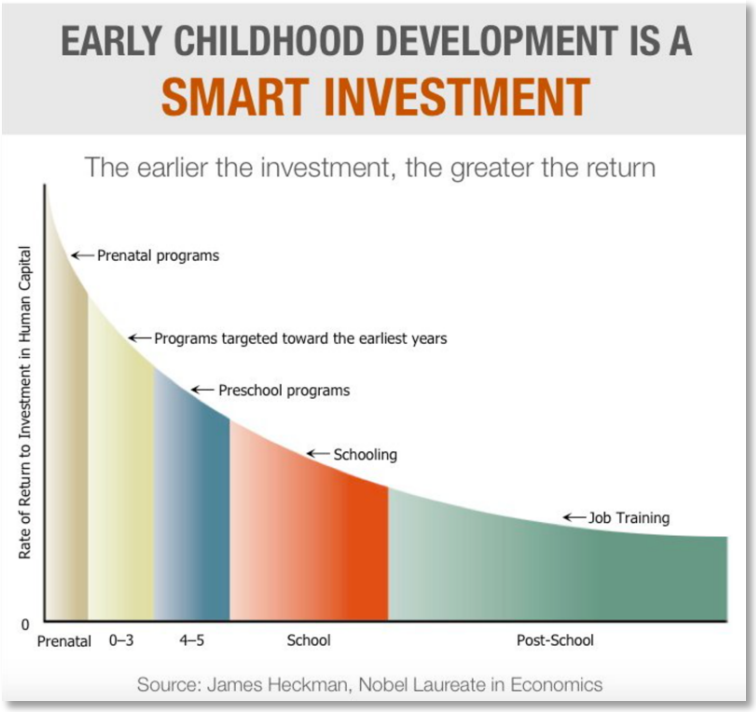
More generally, there are several direct and indirect costs resulting from declining enrollment in high-quality ECCE programs. First, participation in high-quality ECCE programs both increases graduation rates and decreases the likelihood of placement in special educations classes (Camilli et al., 2010). In Virginia, the pre-COVID-19 high school dropout rate was, on average, 6,500 students annually. According to a recent study from Northeastern University, the resulting estimate costs per dropout are $292,000 to taxpayers in the form of lower tax revenue (Chapman et al., 2011; Sum, 2009) which results from the lower-earning rates of high school dropouts–whose lifetime earnings are $260,000 *less* than their peers who graduate (Workman & Jessen-Howard, 2017). Collectively, this results in an estimated cost to the Commonwealth of $2.7 billion annually if the 9,116 students currently not meeting school readiness benchmarks are not brought up to grade-level literacy skills. These averages will explode in the near future if the VDOE does not address the impact of the pandemic on decreasing rates of school readiness which are indicative of the likelihood of graduating high school (Heckman, 2017; Lynch, 2013).

Alternatively, the potential increase of placement and retention in special education programming has resulting costs equating to an annual per-pupil expenditure ranging from $8,000 to as much as $12,000, respectively (Chambers et al., 2002; McFarland et al., 2018). Importantly, educating students with special needs necessitates an additional expenditure estimate to be $5,918, per student on average (Chambers, et al. 2018). These costs to the individual in the form of depressed wages and to society regarding increased investment in social support programs is significant. If the increase of 9,116 students identified as at-risk for not meeting benchmarks is any indication of the increasing need, Virginia would be looking at an increased cost of at least $54 million annually.

Beyond individual consequences, participation in high-quality ECCE programs has implications for society at large. For instance, cost-benefit studies show anywhere from 2 to 17 dollars in return per dollar invested–depending on what age the child entered a program between birth to five (Heckman, 2017). The benefits of participation in these programs contribute to reductions in incarceration rates and decreased need for social services such as unemployment (Cannon et al., 2018; Karoly, 2012; Karoly et al., 2005). If higher rates of students begin school behind, these benefits will be lost and contribute to increased costs associated with higher incarceration rates and strains on social service programs. As a result of this increased likelihood of adverse outcomes, high school dropout cost state (and federal) governments hundreds of billions of dollars in both lost earnings (taxable income) and additional cost burden in the form of providing unemployment, cost of incarceration, and subsidies (Lynch, 2013). Due to mitigating these increased costs, both investment and participation in high-quality ECCE programs reduce national deficits and promote economic growth (Allen & Backes, 2018). However, the types of ECCE program attended and invested in matters (Heckman, 2013,

2017). For these reasons, addressing both declining enrollment and the impact of virtual instruction on school readiness is necessary.

Figure 8. Returns to a Unit Dollar Invested are Highest in Earliest Years



LITERATURE REVIEW: EVIDENCE OF POTENTIAL SOLUTIONS

HIGH-QUALITY ECCE PROGRAMS PROMOTE SCHOOL READINESS

Declining enrollment in high-quality, publicly funded programs, as well as decreased in-person instruction time for those who remained enrolled, is concerning because a convincing body of evidence demonstrates the importance of participation in high-quality ECCE programs for young learners' school readiness which is indicative of long-term academic success (Meloy et al., 2019; Phillips et al., 2017; Weiland et al., 2017). School readiness depends on five areas of development that are instructive in high-quality ECCE experiences: social-emotional development, physical well-being that includes motor development, literacy skills, ability to concentrate, and cognitive skills (Danley, 2019). The benefits of participation in high-quality ECCE programs are both individual and societal.

Participants in high-quality ECCE programs are more likely to enter kindergarten school ready (Ewen & Herzfeldt-Kamprath, 2016; Feldman, 2018; Karoly, 2016) which increases the likelihood of long-term academic success (Feldman, 2018; Frede & Barnett, 2011; Karoly, 2016; Loeb & Bassok, 2007; Weiland et al., 2017). Some of these individual benefits include a greater likelihood of graduating high school (Karoly, 2016) and attending college (Feldman, 2018) and higher lifetime earnings that result

(Chetty et al., 2011; Sum, 2009); as well as improved health outcomes (Jones et al., 2015; National Academies of Sciences et al., 2019). Specifically, the effects of preschool promoting school readiness carry forward to third-grade performance as evidence by a natural experiment that compared students from high-poverty households who attended a high-quality preschool (treatment group) to their similar SES peers who did not attend such a program (control group). The results demonstrate that students in the treatment group scored proficient or above at a rate nearly double (18%) those of students in the control group (10%) (Frede & Barnett, 2011). However, the quality of educational opportunities it sustained through students' K-12 experiences for the benefits of attending high-quality ECCE programs must not fade out (Loeb & Bassok, 2007). The evidence is clear that participation in high-quality ECCE programs promotes school readiness which is a highly predictive measure of later academic success. In particular, if children continue to have access to high-quality K-12 experiences (C. W. Yoshikawa Rebecca Unterman, Anna Shapiro, and Hirokazu, 2019). As such, the VDOE and the DSR have a unique interest in targeting investment at educational interventions that prioritize assessing rates of school readiness and intervening accordingly.

An inherent assumption in these standards for high-quality ECCE programs is that all instruction is occurring in person. However, we know most of those student's enrolled in publicly funded preschools nationally were learning virtually, remotely, or hybrid (at least part-time in-person). Conversely, only about one-third were learning fully in person (Kamenetz & Uzunlar, 2021). Where and how younger children and being cared for and learning is an important consideration when determining how best to address declining enrollment in publicly funded, high-quality, in-person ECCE programs and diminishing rates of school readiness. Much like declines in enrollment, access to and enrollment in different modes of instruction is also disparate by race/ethnicity and SES. A National Public Radio (NPR) and Ipsos poll found that Black (67%) and Hispanic (57%) families were more likely than white (38%) parents to report that their child was learning remotely (Kamenetz & Uzunlar, 2021). Specifically, because the experiential learning that facilitates the development of these skills cannot be replicated online (AAP Council on Communications and Media, 2016; Mader, 2017). Importantly, researchers in the science of learning field have convened around four key features necessary to promote learning: active participation, full engagement (no distractions), social interaction, and building meaningful connections with teachers and peers (Fisher et al., 2010; Hirsh-Pasek et al., 2015; Sutton-Smith, 2001). This raises additional concerns for those students who were enrolled in some form of virtual, remote, or hybrid instruction this AY.

THREATS TO SCHOOL READINESS

VIRTUAL LEARNING

The pandemic is not the first time preschoolers have had to learn online. Some states have used online preschool to address two significant barriers to participation in high-quality ECCE programs access and cost. One of the dozen or so online preschool programs that promise to promote school readiness is UPSTART. This program seeks to provide "four-year-old children the highest form of academic support in their early education at no cost to participants…" including a new computer and internet

if needed. The program claims that the average UPSTART student "enters kindergarten reading at a first-grade level" ("Waterford UPSTART - Kindergarten Readiness," n.d.). Many states, like Utah, are so attracted to this quick fix for two of the most pressing issues preventing all preschoolers from attending high-quality ECCE programs that nearly 30 percent of the states' preschoolers attend an UPSTART preschool. The cost of providing preschool instruction online, through programs like UPSTART, is attractive because, on average, the expense is nearly $2,000 less per pupil than traditional publicly funded, in-person, pre-K programs (Mader, 2017).

While the costs of online or virtual instruction for preschool might be fiscally attractive, it does not effectively promote school readiness. The Utah Department of Education impact evaluation report found that UPSTART students outperformed their peers who did not participate (in UPSTART or any ECCE program) on standardized exams from kindergarten through fourth grade. Additionally, UPSTART participants increased specific early literacy skills such as pre-primer vocabulary and phonemic awareness. However, the National Institute for Early Education Research (NIEER) informs that while these narrow skills–alphabet and number knowledge, and color recognition–can be learned quickly through repetition, more complex academic skills and non-academic, social-emotional skills–which are stronger predictors of school readiness and success–are not replicable online (Mader, 2017). There is also effectively no consideration for a parental ability to be both home to supervise and available to support their preschooler's online learning. Even if online learning successfully promoted school readiness, the World Health Organization and the American Academy of Pediatrics recommend no more than one hour of screen time per day for children ages 2 to 5 (Jasarevic, 2019; Pappas, 2020). For these reasons, online schooling alternatives were discarded from this policy development process noting how important it is to prioritize returning preschoolers and would-be-kindergartens to in-person instruction.

COVID SLIDE AND ITS IMPACT ON SCHOOL READINESS

Learning loss induced by school closures and subsequent modes of instruction that limited the number of students learning in person this AY is yet to be determined. However, the literature on learning loss stemming from chronic absenteeism, summer break, and other school closures can help inform the estimated impact of the pandemic on learning loss for Virginia's youngest learners. A recent working paper from the Annenberg Institute at Brown University projects, "…students [sic] likely [returned] in fall 2020 with approximately 63-68% of the learning gains in reading relative to a typical school year and with 37-50% of the learning gains in math" (Kuhfeld et al., 2020). Similarly, a recent Brookings report posits, "…if learning in grade three is reduced by one-third, roughly how long many children are likely to be out of school, learning levels in grade 10 would be a *full year lower* than they would have been with no shock…" (*See Figure 9*) (Barnum, 2020). Importantly, these researchers note that learning loss is likely not universal, meaning that the top third of students may make gains in reading relative to their under-resourced peers (Kuhfeld et al., 2020).

The literacy on learning loss debates the extent to which it is a true "learning loss" or more attributable to persistent equity gaps that are present before students even enter kindergarten. However, the

literature consistently convenes around three trends: losses are steeper in math than for reading, loss increases most, proportionally, in the upper grades, and academic progress slows or declines over the summer months (Kuhfeld et al., 2020). Estimates of learning loss range from a minimum of two weeks to a high of two to three months over summer break (Bielinski et al., 2020; von Hippel, 2019). Notably, some students from high-income households even make learning gains over the summer months (Kuhfeld et al., 2020). The most recent consensus of learning loss literature suggests that summer break is not when socioeconomic and racial/ethnic equity gaps widen (Kuhfeld et al., 2019; von Hippel, 2020, 2019). Several studies inform that what is conventionally referred to as learning loss is more accurately represented by equity (achievement/opportunity) gaps which present themselves as early as 18 months and widen throughout early childhood (Loeb & Bassok, 2007; Shonkoff & Phillips, 2000).

Recent reports projecting the extent to which COVID-19 and virtual learning exacerbate learning loss varies. Leveraging preexisting MAP® Growth™ data[10] on summer learning loss, researchers from NWEA project students returned in fall 2020 with nearly 70 percent of learning gains in reading and less than 50% in math relative to a typical school year (Kuhfeld et al., 2020). Similarly, research from Illuminate Education reports that school closures will result in a "COVID slide" of two months of learning loss in reading and up to four months in math for grades K-2 with losses being greatest for kindergartners (Bielinski et al., 2020). While other estimates vary from a few months to nearly a year of loss the concern is evident and highly dependent on whether grade land where preschool-aged children were learning instead of in-person at high-quality ECCE programs (Mader, 2021; Shapiro & Bassok, 2021; Strauss, 2020). These divergent experiences will contribute to disparate rates of school readiness for incoming PK and would-be K students in fall 2021.

LEARNING LOSS AND TRAUMA: LESSONS FROM KATRINA

The impact of Hurricane Katrina on the mass closure of New Orleans public schools offers insight into lessons learned regarding successes and failures at addressing the loss of in-person instruction time for tens of thousands of students (Hill, 2020). In the wake of Hurricane Katrina, New Orleans schools closed abruptly in August of 2005. Most schools did not return until the Fall of 2006 or later (Hill, 2020; Reckdahl, 2015). As such, the long-term disruption to education, post-Katrina, offers commensurate lessons for policymakers to predict the impact of the significant loss of in-person instruction time due to the effect of COVID-19.

A growing body of research informs that young children's ability to learn is intrinsically linked to a sense of security and strong relationships with the adults both in their home and their classrooms (Alzahrani et al., 2019; Golden, 2006; Reckdahl, 2015). As a result of Katrina, many young children (and their families) experienced a great deal of uncertainty. Parents can act as a buffer during ACE such as the pandemic (Ragavan & Randell, 2020; Shonkoff & Phillips, 2000). However, if parents' level of stress increased significantly and they are unable to provide a secure and calm environment

[10] This report uses a national sample of over five million students in grades 3-8.

conducive to early learning experiences, children's ability to recover from these stressful experiences is impeded (Barr, 2018; Bethell et al., 2014; Shonkoff & Phillips, 2000). Studies show that if high levels of stress and uncertainty persist for a prolonged period, the risk of derailing children's SEL and academic development only increases (Barr, 2018; Golden, 2006). These same pressures were and continue to be present during the pandemic.

Katrina disrupted in-person instruction for a significant length of time which impacted long-term academic performance for many students. These closures disrupted both their learning and their relationships with teachers and peers, stunted behavioral growth, and their likelihood of entering kindergarten "school ready" (Golden, 2006; Shonkoff & Phillips, 2000). A substantial body of research lays bare the importance of student-teacher relationships and teacher effectiveness in regard to school readiness and subsequent academic success (Jackson, 2018; Murnane & Steele, 2007; von Hippel, 2020). During Katrina, fewer hours spent in the classroom resulted in immense losses in K-12 classrooms in math, with some students returning, after a year out of traditional schooling, nearly two years below grade level (Hill, 2020). For the youngest learners, starting school behind can have devastating long-term effects (Frede & Barnett, 2011; Loeb & Bassok, 2007).

While Katrina and COVID-19 are not identical, both created similar circumstances in terms of increased levels of stress, uncertainty, and increased potential for ACE several years post-pandemic (*See Figure 10*) (Powell, 2021); as well as decreasing the time young learners spent in high-quality ECCE programs in the critical years before kindergarten (Hill, 2020; Raker et al., 2020). The most applicable lessons from Katrina draw on the consequence of non-interventions that, in the long-term, proved vital for recovering students. First, addressing students' readiness to learn through trauma-informed SEL intervention is necessary to ensure that any subsequent educational interventions are most effective. Second, school districts cannot adequately address learning loss in a single AY (Bielinski et al., 2020). School districts must continually assess students' overall well-being and academic performance throughout K-12 to evaluate their progress.

EDUCATIONAL INTERVENTIONS TO PROMOTE SCHOOL READINESS:

LITERACY INTERVENTIONS

With motivated concern for disrupted learning in the critical years before K-12 schooling begins, it is beneficial to consider potential interventions. A sturdy early literacy foundation is a proven intervention that critically contributes to later academic success. For example, the National Right to Read Foundation cites, 85 percent of delinquent children and 75 percent of incarcerated adults are illiterate and cost taxpayers an estimated $224 billion, annually. These cost derive from welfare payments, crime, unemployment, lost tax revenue, and remedial educational supports (Callins, 2006). Early literacy interventions help promote school readiness and future academic success because literacy skills are predictive of later reading abilities. As such, promoting an enduring literacy foundation for young learners earlier, rather than later, can have long-term impacts on academic

success and even high school graduation rates (Heckman, 2013; Invernizzi et al., 2004). Thus, addressing learning loss relative to early literacy skills predictive of school readiness is essential.

In 2002 the National Early Literacy Panel (NELP) convened to summarize the scientific evidence on early literacy development to contribute to educational policy decisions and educator's practice to best support the needs of young learners' literacy development. Five hundred research articles were included in their meta-analysis including both correlational and experimental data to demonstrate that relationship between children's early literacy skills and later literacy development as well as the impact of early literacy interventions on children's readiness to learn and later academic success, respectively. Their analysis found that the most effective strategies in the kindergarten setting prove equally (or even more) effective for preschoolers. However, there are too few studies of preschool literacy to provide a high degree of certainty. Ultimately, the interventions that produced the largest positive effects on children's early literacy skills were those conducted one-on-one or in small-groups (Lonigan & Shanahan, 2008).

Additional research confirms that the sub-groups of interest in this report are most in need of early literacy interventions. While children from ED households are more likely to struggle with literacy throughout their schooling (Snow et al., 1998), high-quality early literacy interventions targeted at these students can reduce these threats to reading readiness and later academic success (Vellutino & Scanlon, 2002). For EL students who often have more difficulty acquiring early literacy skills than their native speaking peers, stand to benefit nearly equally between bilingual (Durán et al., 2016) and monolingual (Larson et al., 2020) literacy interventions as long as the focus is on both oral and code-related (Fitton et al., 2018) skills. Another effective intervention, particularly for minorities students is culturally responsive reading intervention. Though preliminary, evidence suggests that using relevant schema relative to a child's background can increase engagement and thus the benefits of early literacy interventions (Callins, 2006; Cheesman & De Pry, 2010). The research makes clear that high-quality early literacy interventions targeted at the very sub-populations most likely to have missed out on these opportunities is vital to address decline rates of school readiness when students return in fall 2021.

TRAUMA-INFORMED SOCIAL-EMOTIONAL LEARNING INTERVENTIONS

Much like early literacy skills, SEL is also a critical component of school readiness. The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines SEL is, "the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions" (Bridgeland et al., 2013). More specifically, SEL focuses on critical components of students' ability to succeed in academic settings and life (*See Figure 11 for more details*). Self-regulation refers to the skills needed to manage emotions, direct attention, and coping skills necessary to mitigate stressors stemming from demanding school environments. Specifically, in a school setting, this looks like following directions and scheduling, staying engaged in tasks, and expressing emotions in a socially acceptable manner. Another crucial component of SEL is the socialization needed to thrive both academically and in life. Skills included under this umbrella term encompass the ability to establish

and maintain meaningful relationships with both peers, communicate effectively with adults, and navigating social interactions with minimal distress (Alzahrani et al., 2019). For young learners this looks like cooperating with groups of peers, resolving conflicts or asking for help when appropriate, and maintaining friendships over time.

Advocates of SEL cite its ability to develop the "whole child" which is not be a central focus of other early education interventions. More importantly, trauma-informed SEL interventions are best practice because it is particularly inclusive and responsive to the needs of those students most in need of SEL intervention, those who have experienced ACE that pose a threat to students' readiness to learn (Oehlberg, 2008). ACE are events experiences (or witnessed) by a child that are potentially traumatic or present extreme and/prolonged adversity and induced stressors. This can include, but is not limited to: abuse, neglect, and other environmental circumstances that can undermine a child's sense of safety, stability, or ability to bond with those around them (*Adverse Childhood Experiences (ACEs)*, 2021; Bethell et al., 2014). These "environmental circumstances" can include trauma and increased stress related to natural disasters (like Katrina) and prolonged periods of increased stress (like that of the pandemic) (Domzalski, 2020). Key trauma-informed SEL practices promote predictable schedules to create a sense of safety, building supportive relationships with peers and adults, empowering students self-efficacy, supporting the development of self-regulation skills, and providing opportunities to explore individual and communities identities ("Trauma-Informed SEL Toolkit," 2020). Schools that have effectively adopted a holistic approach to trauma-informed SEL have experiences improved test scores, greater retention of teachers, improved school climates, and reductions in rates of dropout (Oehlberg, 2008).

A robust body of research establishes that integrating evidence-based SEL pedagogy into classrooms results in improved attitudes, behaviors, and improved academic performance (Bridgeland et al., 2013). A meta-analysis of 213 school-based SEL programs (including 270,034 K-12 students) confirms that students who participate in high-quality programs that incorporate SEL have achievement scores 11 percentile points higher, on average than their peers who did not receive such interventions (Durlak et al., 2011). SEL contributes to high-quality ECCE programming and can mitigate at least some of the impact of ACEs for impacted students.

TAKEAWAYS FOR VIRGINIA'S DIVISION OF SCHOOL READINESS

The literature review provides insight regarding the approach that Virginia can take to address the declining rates of school readiness that result from declining enrollment in publicly funded preschools during the pandemic and loss of in-person instruction time for those that remained enrolled.

- VDOE's DSR must continually monitor publicly funded preschools to ensure that features of high-quality ECCE programming is consistent across divisions.

- PK and K students should be prioritized for in-person instruction because the unique skills promoted in preschool cannot be replicated online, and educational interventions in preschool definitively reap the most substantial returns on investment.
- Virtual schooling alternatives, though necessary this year, are inadequate. If temporary school closures become necessary, the DSR should ensure that students from ED households, those with special needs, and EL students should be prioritized.
- Learning loss has already occurred, and as such, the DSR should be focusing on mitigating its long-term impact on the incoming cohort of PK and would-be K students in fall 2021 and subsequently throughout K-12 for these cohorts.

Lessons from Katrina, and other natural disasters that resulted in prolonged school closures, offer insight into what may or may not work for Virginia's context. Specifically, this motivates the need to consider trauma-informed SEL interventions. While not all children experienced ACE during the pandemic, this is a new reality for an increasing percentage of students, and the State should assess the extent to the impact on students' readiness to learn.

- ED, EL, and minority students need special attention paid to their literacy skills when they return to publicly funded PK, and the DSR should promote a culturally responsive pedagogy to ensure that the benefits of such interventions yield effective returns on investment.

EVALUATIVE CRITERIA:

The following employs four criteria, informed by the prior literature review and client priorities for evaluating each policy alternative. Each criterion is weighted relative to one another. Scores of a low, medium or high are allocated to qualitative categories, while those which are quantifiable will receive a relevant numeric estimate. The resulting decision matrix will provide a holistic assessment of each alternative relative to one another that informed the ultimate policy recommendation that follows.

EFFECTIVENESS

The following criterion measures the extent to which a given alternative reduces the number of K students identified by VKRP as not meeting school readiness benchmarks in subsequent AYs. Evaluation of effectiveness will use the pre-pandemic average of 36 percent of students not meeting the benchmark because this is the core outcome that the DSR is interested in addressing. A policy's respective effectiveness is measured by calculating projected reductions in the average number of students falling below the VKRP benchmark. However, there are limitations to existing data, and as such, projections will be estimates of effectiveness informed by the broad literature surrounding a given alternative's effectiveness in other settings.

EQUITY

The DSR, and its Chief Readiness Officer Jenna Conway, have communicated a directive to center equity in all potential policy interventions. As a result, all alternatives herein are equity-focused but rated relative to one another regarding the extent to which they prioritize the sub-populations of

students who were more likely to be "missing" from Virginia's publicly funded PK and K classrooms for the 2020-2021 AY. These sub-populations include students from low-income households, whom VDOE refers to as ED, Black and Latino PK students (or incoming Kindergarteners), and English Learning (EL) students in both PK and K. An equitable policy identifies disparities and focuses resources equitably to that sub-population most impacted. Regarding equity, alternatives will be deemed low, medium, or high in their ability to address, equitably, the declining rates of school readiness for these students.

FEASIBILITY

This criterion evaluates how likely implementation of a given policy alternative would occur as presented. A policy's given level of feasibility will be assessed along two dimensions: political and administrative. Each sub-criteria will be rated on a scale of 1 to 3, with one being the least feasible and three being the most. Combined, the two dimensions can range from a score of 0 to 6 for the overall feasibility of a given alternative.

POLITICAL

Political feasibility assesses the likelihood that the DSR can influence or regulate the given alternative given concerning the political context such as existing legislation, agenda-setting, timeliness, and the plausibility that opponents would oppose such efforts.

ADMINISTRATIVE

Administrative feasibility seeks to assess how likely a given alternative would be implemented and operationalized. Considerations include: if the policy alternative needs additional funding and/or staffing to the extent that the program would be effective at addressing the problem as defined. This dimension will include the complexity of the proposed alternative, the additional burden on the VDOE's current capacity, the number of agencies that need to be involved, and whether or not the program would require a pilot study or phased-in approach.

COST

This criterion measures the projected costs of each alternative. The DSR has indicated that it has at least $5 million to navigate the risk mitigation process in addition to existing Preschool Development Grant (PDG) expenditures and forthcoming American Recovery Act relief funds, some of which are earmarked for addressing learning loss resulting from the pandemic. While the exact funding levels are yet to be determined, any additional funding needed to implement and sustain a given policy alternative is assessed, respectively. However, because the exact costs of many of the inputs are difficult to determine, a cost estimate will be provided for each alternative and ranked in terms of sheer cost relative to other options. Those alternatives that cost more will rank lower.

POLICY ALTERNATIVES:

The following policy alternatives seek to address the impact on enrollment rates in publicly funded preschools and the resulting declines in school readiness rates that arose because of school closures and subsequent modes of instruction. While this report ultimately recommends one alternative, the DSR should consider the benefit of pursuing all policies since, combined, they address the potential to build back a better, more equitable, ECCE system for all of Virginias youngest learners.

ALTERNATIVE 1: INCREASE FUNDING AND EXPAND VIRGINIA'S EXISTING EARLY INTERVENTION READING INITIATIVE

This alternative seeks to expand the existing Early Intervention Readings Initiative (EIRI) to all incoming PK students in the Commonwealth to address the increasing need of students not meeting school readiness benchmarks regarding literacy as evidenced by Virginia's PALS. Research shows that students who begin school without critical literacy skills quickly fall behind their peers in academic achievement (H. Yoshikawa et al., 2020). Specifically, students not proficient in reading by grade three are four times more likely to drop out of high school (Chapman et al., 2011; Feldman, 2018; Heckman, 2013). Importantly, 88 percent of high school dropouts were below average in reading proficiency in grade three (Masters et al., 2021). The impact of this decision is lifelong, and the costs far-reaching. High school dropouts earn–on average–$200,000 less than a high school graduate and $1 million less than a college graduate over their lifetime. Those who do not complete high school is also nearly twice as likely to be unemployed than the continuing peers are more likely to commit crimes, abuse drugs and alcohol, become teenage parents, and living in poverty (Chapman et al., 2011). Upfront investments in ECCE are demonstrated to decrease the costs associated with increased rates of high school dropout by promoting school readiness (Heckman, 2013, 2017). Further, research attests that intervening later in K-12 is minimally effective at mitigating these impacts (Chetty et al., 2011). Thus, addressing readiness gaps related to early literacy skills now is critical.

EVALUATIVE CRITERIA FOR ALTERNATIVE 1: EXPANDING EIRI TO ALL PKS

EFFECTIVENESS

Increased investments in EIRI contribute to mitigating the impact that loss of in-person instruction time is having on school readiness. With an estimated 9,116 additional students eligible for services, the program requires increased investment to meet demonstrated needs. The role of VDOE would be incentivizing school districts, which have broad discretion in what interventions look like, to target EIRI funding to students most in need of support. A recent program evaluation of the Virginia Preschool Initiative Plus (VPI+) demonstrated that 67 percent of ED students who participated in their program met school readiness benchmarks relative to just 52 percent of incoming K students overall (Gaylor et al., 2019). EIRI uses a similar approach to literacy interventions and provides the benefit of a lower teacher-to-student ratio which is a costly but beneficial educational intervention (Barnett & Jung, 2021; Camilli et al., 2010; Robinson et al., 2021). Combining a targeted literacy

intervention with lower teacher-to-child ratios, the expansion of EIRI ranks medium in effectiveness for its potential to mitigate the increased impacts that loss of in-person instruction time has on PK and K students' school readiness.

EQUITY

The 2020-2021 AY PALS report reveals a nine-percentage point increase in K students identified as at high-risk which are those students who did not meet the 'benchmark score' measuring school readiness (*See Figure 6*). This is five times that of any one-year change and the corresponding decline in school readiness represents the "largest single-year decrease" in the twenty-year history of PALS (McGinty et al., 2021). Resultingly, there is an increased need for 9,116 additional PK and K students who are now eligible for services under VDOE's Early Intervention Reading Initiative (EIRI) (McGinty et al., 2021). However, because of COVID-19's impact on enrollment drops in Virginia's publicly funded programs combined with the fact that more than 55 percent of PALS assessments were conducted remotely (Masters et al., 2021) this is likely an underestimate of the true need for literacy intervention in the upcoming AY. For this reason, it is important the VDOE's DSR prioritizes the expansion of EIRI which seeks to intervene with children identified as at-risk of not meeting literacy benchmarks by third grade. This alternative ranks highest in equity because, by expanding and reassessing students in the fall, it prioritizes students most in need of intervention as identified by PALS.

FEASIBILITY

Since EIRI is an existing program, generally supported by existing teachers and school divisions, and legislation requires all eligible students are served by the program, this alternative ranks highest in political feasibility. However, the initial costs are appreciable. Out of three possible points, this alternative ranks 3 out of 3. Expanding EIRI to meet the increasing need, as identified by PALS, will require recruiting, training, and certifying high-quality aides (and/or tutors) will support students' literacy development. While most state-funded PK programs require that teachers hold a bachelor's degree, EIRI, at the discretion of the local school division, utilizes special reading teachers, trained aides, computer-based reading tutorial programs, and volunteer tutors under the supervision of certified teachers. Because expansion of EIRI requires at least 3,545 additional teachers and/or support staff, its administrative feasibility ranks medium. As such, this alternative ranks 2 out of 3 in terms of administrative feasibility for a total of 5 out of the total 6 points.

COST

The cost of expanding EIRI to PK classrooms is estimated to be $120,003.02 (*See Appendix for cost calculations*). The program is eligible to use federal COVID-relief funds, and a portion of the $5 million provides to the DSR in the 2021 FY state budget.

ALTERNATIVE 2: INCENTIVIZE AND FUND EXPANSION OF VIRGINIA'S KINDERGARTEN READINESS PROGRAM'S CHILD BEHAVIOR RATING SCALE

This alternative seeks to understand–to the broadest extent–the impact that COVID-19 and the resulting increase in levels of stress and the likelihood of ACE (Ragavan & Randell, 2020; Yoshikawa et al., 2020) had on students' SEL and overall well-being both of which impact school readiness. Specifically, this alternative recognizes the need to consider students' readiness to learn in the immediate relative to their overall well-being; this includes SEL as well as the long-term impact the stress and potential trauma of the past year may have on their future academic progress (Alzahrani et al., 2019). Teachers and schools will be better prepared to "meet students where they are at" by assessing the extent to which lack of in-person instruction time had on students' SEL skills and what types of stressors and/or trauma both PK and K students experienced. Equipped with this information, they can adjust expectations and curricula accordingly to maximize support.

EVALUATIVE CRITERIA FOR ALTERNATIVE 2: EXPANDING CBRS TO ALL PKS

EFFECTIVENESS

Understanding children's self-regulation and social skills improve teachers' responsiveness to students' individual needs which will be an essential component to supporting students who had disparate experience during COVID-19. Increasing access to CBRS in all PK classrooms will boost teachers' and schools' understanding of students' needs regarding trauma, stress, and disruption experienced during the pandemic and its impact on academics and school readiness (Ragavan & Randell, 2020). Specifically, CBRS has been shown to improve children's overall cognitive achievement (Lee et al., 1998), literacy (Ponitz et al., 2009), math (Wanless et al., 2013), and other indicators of school readiness (Kim et al., 2016). As a result, educators will be better equipped with assessment data, comprehensive reports, and aligned instructional resources from VKRP aimed at directing funding to students identified as having adverse experiences during the pandemic that could impede on their capacity to learn in an academic setting. This allows schools to meet students where they are socially and emotionally such that students become better prepared to learn in a classroom setting (Alzahrani et al., 2019; McCormick et al., 2015; Payton et al., 2008). As such this alternative ranks medium for effectiveness.

EQUITY

This alternative implements a statewide approach to assessments, meaning every student in publicly funded PK and public-school Kindergarteners receives an assessment. Specifically, CBRS will help identify the impact that disparate experiences during COVID-19 had on students' SEL and overall well-being (James, 2020). Doing so helps target SEL interventions that will, in turn, support academic performance (Alzahrani et al., 2019). However, there are concerns that since teachers are not objective observers that their implicit biases may influence the results of the CBRS since their own perceptions are central to how they interpret students' behaviors (Bender, 2016). Because EIRI's approach does not solely target the sub-populations of interest, this alternative rank medium for equity.

FEASIBILITY

In terms of political feasibility, this alternative is rated 3 out of a possible three points because the program already has support via the pilot PK program with the potential to scale up the program in the 2021 fiscal year

(FY) budget. Administratively, the burden of this alternative is low because the K program is already undergoing implementation statewide, and a PK pilot program ran during the 2020-2021 AY. No additional teachers are needed to expand the program, and those teachers requiring CBRS training are both a low-cost and low-time commitment on the part of the DSR. Completing the assessment is a relatively low time commitment taking, on average, 1-3 minutes per student during which teachers directly input assessment into the online PALS portal. As a result, this alternative ranks 3 out of 3 for administrative feasibility, for a total of the maximum six points.

COST

The cost of expanding the administration of CBRS to the publicly funded PK classrooms which are not participating in the pilot program is minimal. Researchers from the University of Virginia train both teachers and support personnel and provide the assessment materials via grant funding which comes at no cost to state partners. No additional teachers or aides are necessary for the implementation of this alternative as the use of the CBRS assessment is just being expanded. For these reasons, this alternative ranks highest in cost-effectiveness. However, the opportunity cost of conducting the 1-to-3-minute CBRS assessment is $1.32 per assessment that collectively results in $44,238 statewide and is a high estimate assuming each CBRS assessment takes the full three minutes (*See Appendix D for detailed cost calculations*).

DECISION MATRIX:

The following decision matrix summarizes the evaluation of each policy alternative against all criteria, illustrating the strengths of the recommendation.

Table 4. Decision Matrix

	Criteria			
Alternatives	**Equity**	**Feasibility**	**Cost**	**Effectiveness**
EIRI	High	Overall: 5/6 *Political:* 3/3 *Administrative:* 2/3	$ 120,003.00	Medium-High
CBRA	Medium	Overall: 6/6 *Political:* 2/3 *Administrative:* 3/3	$ 44,238.00	Medium

POLICY RECOMMENDATION:

The DSR should pursue Alternative 1 and expand the Early Intervention Reading Initiative to all pre-Kindergarten classrooms. Literacy interventions are highly predictive of school readiness and their impact on student progress, and thus effectiveness, is measurable through subsequent PALS assessment as this alternative generates the most substantial and equitable benefits in the immediate. However, the state should also weigh the importance of expanding measuring how students' SEL was affected and the effect on readiness to learn.

IMPLEMENTATION CONSIDERATIONS:

Educational interventions addressing school readiness must anticipate potential challenges in the implementation process to be most effective. Importantly, because of Virginia's decentralized school system, there is a high likelihood that implementation would experience impediments such as:

- Lack of workforce supply to meet the increased need (9,116 students) as identified by PALS,
- Conflicting priorities between state and local partners concerning the allocation of funding, and
- Anticipated need being a vast underestimate of true needs across divisions.

STAKEHOLDER PERSPECTIVES

It is necessary to address the roles and perspectives of various state actors when considering implementation. Considering the DSR itself will not directly implement the policy, attention must be given to providing proper funding, accountability measures, and incentives for compliance. School boards and divisions will then generate buy-in from school administrators and teachers by focusing on the stated policy's objectives of promoting school readiness.

Superintendent/School Boards/Divisions: Since EIRI is an established program that has received consistent support from superintendents, school boards, and divisions, the DSR must communicate to school boards both the increased need and expectations regarding expansions of the program. Local school districts and Superintendents need substantive and consistent support from VDOE and the DSR in supporting the needs of teachers and students throughout the implementation of the given policy. The DSR's role is to ensure funding levels meet the anticipated needs of divisions and schools immediately. This role requires using division and even school-level data to allocate funding, equitably, to schools most in need, based on how many students did not meet the PALS benchmark in PK and K for Spring 2020. Knowing that these numbers are likely a vast underestimate of the actual need, VDOE and the DSR must ensure that divisions receive adequate funding that will cover that which will be identified after completing the fall 2021 PALS.

Principals and School Administrators: Similarly, current principals and administrators are familiar with the implementation of the EIRI program. The DSR needs to ensure that school boards and divisions are transparent in their communication to principals and administrators concerning the increased need specific to their school. By earmarking funds allocated to schools to expand EIRI, the DSR must ensure that Principals and relevant school administrators have the appropriate resources (both time and money) to support teachers as they conduct assessments. This step requires ensuring they have school-level data concerning the increased need at their specific school and they can staff accordingly. Providing this information allows schools to determine how many volunteers and teacher's aide are needed based on number of students and the required instructional time.

Teachers, Volunteers, and Aides: Many current teachers are already aware of EIRI and trained in its targeted literacy intervention approach. This approach is an effective means for supporting the school

readiness of students most in need. Since funding for the training of additional teachers is not a cost incurred by VDOE, the DSR, or school divisions, no further funding is necessary to staff sufficient teachers and aides trained to administer EIRI, but they should anticipate playing a facilitation role.

RISK ASSESSMENT

It is necessary to acknowledge potential worst-case scenarios and potential barriers to effective implementation. One, is that the VDOE will not approve a sufficient portion of CARES and/or American Recovery Act funding to expand the EIRI to meet increased need. In this case, the DSR could proceed with influence divisions to try to make ends meet with helping as many students in need as possible, but it would likely be less effective than if they were properly resourced to do so. However, this scenario is unlikely since both Governor Northam and Commonwealth's Secretary of Education Qarni have both demonstrated interest in using funds earmarked for addressing learning loss in similar capacities. Further, current EIRI legislation requires all students not meeting PALS benchmarks to be served by the program so it is unlikely that the 9,116+ students in need would be fully denied services.

Another scenario is that even if enough funding is allocated to expanding EIRI, school divisions will either not be able to recruit enough volunteer or teacher's aides to meet increased need and/or resist full implementation in lieu of what localities may perceive as more pressing needs (other resources etc.). Anticipating this, motivates the need for DSR to further earmark certain funds under the ARP and communicate to intermediary implementors, school boards, that they are responsible for holding divisions accountable for staffing and using funding accordingly. School boards could be allocated some portion of funding for recruitment campaigns.

Finally, it is necessary to consider the continue impact of COVID-19 regarding resumption of in-person instruction. Currently, we anticipate that the number of students that are beginning to return to classrooms this spring will continue to increase for fall 2021. However, in the event that additional waves require instruction to resume remotely or virtually, that the VDOE and DSR anticipate continuing EIRI virtually or through in-home programming as some form of literacy intervention is better than none.

LEADERSHIP RECOMMENDATIONS FOR NEXT STEPS FOR IMPLEMENTATION

Table 5. Action Steps for DSR to Take to Implement Alternative

Action	Window	Stakeholders	Lever	Details
Communicate anticipated need and appropriate level of funding (both estimated herein)	May/June 2021	DSR > UVA EIRI Trainers DSR > School Boards/Divisions	Funding	Using division level data, communicate appropriate funding levels to respective divisions
Begin recruiting teachers, teacher aides, and volunteers (estimated herein)	June-July 2021	DSR > School Divisions > School Admins	Influence Funding	Using division level data, DSR holds school divisions accountable who then coordinate with school administrators to hire sufficient number of teachers and aides to meet anticipated need
UVA Begins training new teachers/aides in EIRI	July/August 2021	DSR > UVA> School Adminis > Teachers	Regulate	Enforcement of existing mandate that all administrators of EIRI are trained by UVA at no cost to VDOE, DSR, or school divisions
Administer PALS assessments to understand true need of students enrolled in publicly funded PK and K programs for fall 2021	July-November 2021	DSR > School Boards/Divisions > School Admins	Regulate	Enforcement of existing mandate that all students receive PALS assessment 6-weeks after beginning enrollment in publicly funded PK/K program

CONCLUSION:

While the DSR cannot control all aspects of implementation, the considerations herein help anticipate potential barriers. As such, DSR can utilize its three levers of funding, regulation, and influence to be transparent with relevant stakeholders regarding their role in successful implementation of the policy. Specifically, exercising leadership to these ends requires the DSR to be clear and consistent with its commander's direction that the ultimate goal of expanding EIRI is to promote school readiness and mitigate the impact that COVID-19 has had for students in PK and K. Since the program is already established throughout most divisions in the Commonwealth, there is not much legwork needed to generate buy-in or understanding of the program. However, the DSR will need to be diligent in its enforcement that the funding is allocated as intended since there are many competing needs across divisions. Allowing some flexibility in how funds are used for either hiring or personal protective equipment to increase recruitment efforts of staff needed to administer the program is necessary to promote proper use of funding. Each division is experiencing various level of need and DSR can promote effective implementation of this policy by acknowledging and continuously monitoring that.

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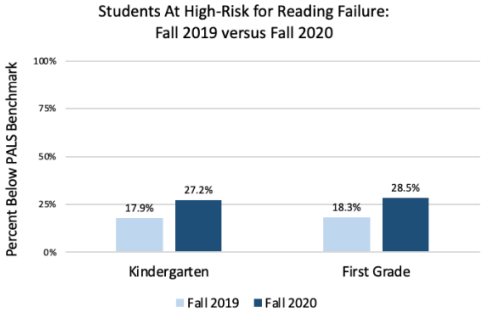
APPENDIX A: PHONOLOGICAL AWARENESS LITERACY SCREENING SPRING REPORT

UNIVERSITY of VIRGINIA | SCHOOL of EDUCATION and HUMAN DEVELOPMENT

Research Brief: Examining early reading skills in the wake of COVID-19: Virginia Fall 2020 state-wide screening key findings.[1], [2]

The Phonological Awareness Literacy Screening (PALS) K-3 assessments are used in 131 of 132 school divisions in Virginia to evaluate students' risk for reading failure prior to third grade. The PALS assessment tools identify students at-risk in early reading (i.e., below the 'benchmark') and results guide the allocation of state funding in support of early intervention through the Early Intervention Reading Initiative (EIRI). *All students below the PALS benchmark are at high-risk for third grade reading failure, in the absence of effective intervention; students at- or slightly above the PALS benchmark also have elevated risk.*

Key Takeaway #1:
PALS data from Fall 2020 show significantly more kindergarten and first grade students starting the school year at high-risk for reading failure compared to last year. The increase translates to 37,894 kindergarten and first grade students identified as at high-risk for reading failure this fall, an increase of 11,000 students. This is the largest single-year increase in students below the PALS benchmark in the history of PALS.



Key Takeaway #2:
The increase in kindergarten and first grade students starting the school year at high-risk for reading failure was largest among students who are Black, Hispanic, economically-disadvantaged, and English learners (EL). From Fall 2019 to Fall 2020:

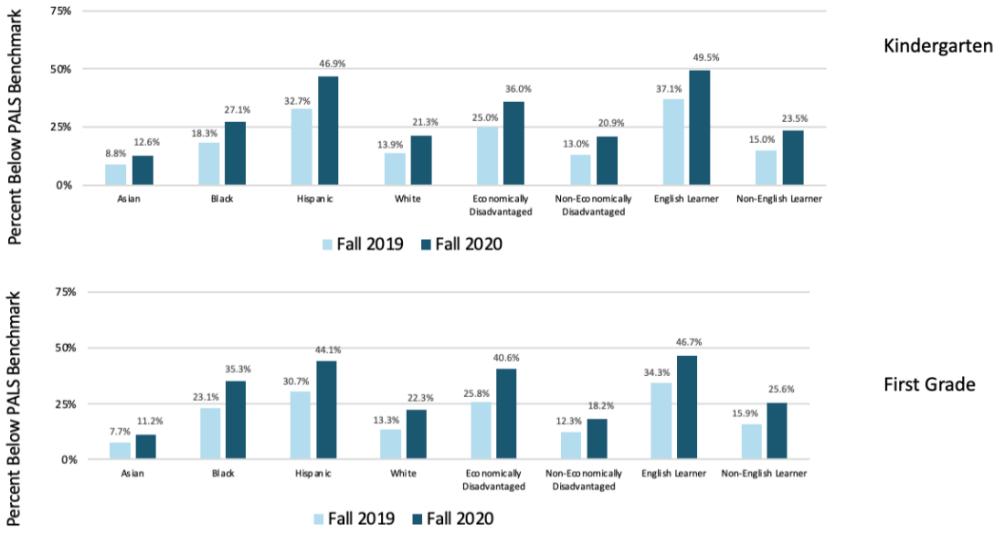
- The increase in Black kindergarten students starting the school year at high-risk for reading failure was 1.2 times the increase seen among White kindergarten students.[3]
- The increase in Hispanic kindergarten students starting the school year at high-risk for reading failure was almost twice the increase seen among White kindergarten students.[3]
- The increase in economically-disadvantaged first grade students starting the school year at high-risk for reading failure was 2.5 times the increase seen among not economically-disadvantaged first grade students. These differences were not as notable in kindergarten; however, data show substantial drops in kindergarten enrollment for economically-disadvantaged students.
- The increases in EL students in kindergarten starting the school year at high-risk for reading failure was 1.5 times the increase seen among non-EL kindergarten students.

[1]: Key findings are taken from McGinty, A.S., Gray, A., Herring, W., Soland, J., & Partee, A. (2021, expected February). *Examining early reading skills in the wake of COVID-19: Virginia Fall 2020 state-wide screening findings and implications.* Report of the PALS Office at the University of Virginia, Charlottesville.

[2] Findings were similar regardless of administration method (i.e., in-person and remote administration methods); reported findings include students assessed by either mode of administration.

[3] Trends were evident but less pronounced in first grade.

Students at High-Risk for Reading Failure: Fall 2019 versus Fall 2020 By Student Group



Key Takeaway #3: The rapid release of a remote administration option for PALS was an important tool for creating visibility into the early reading risks of all students enrolled in public school, particularly for Black, Hispanic, and EL students.[4]

- 55.7% of state data across kindergarten and first grade were collected through remote administration methods.
  - 69.4% of PALS data on Black kindergarten and first grade students were collected through remote administration methods.
  - 67.3% of PALS data on Hispanic kindergarten and first grade students were collected through remote administration methods.
  - 75.5% of PALS data on EL kindergarten and first grade students were collected through remote administration methods.
  - 41.5% of PALS data on White kindergarten and first grade students were collected through remote administration methods.

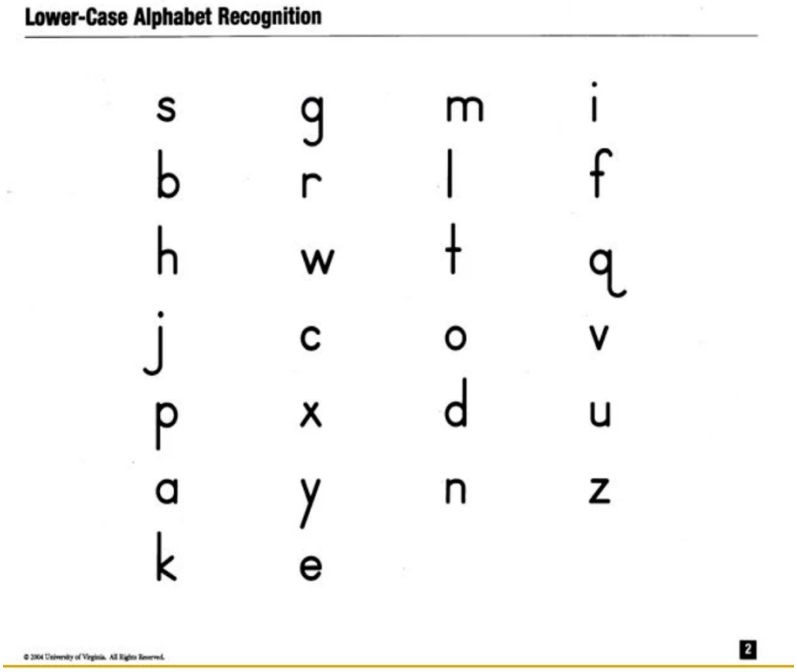
Key Takeaway #4: The increased number of kindergarten and first grade students beginning this school year at high-risk for reading failure is a threat to third grade reading outcomes in the coming years.

- For example, the increased number of kindergarten students falling below the PALS benchmark this fall, compared to last fall, would suggest a 25% increase in students failing to reach reading proficiency by end of G3 for this years' kindergarten cohort, as compared to last.
- This estimate is based on basic projections from historic patterns and emphasizes the relationship of early reading risk to later reading abilities, in the absence of effective instruction and powerful intervention models.

[4] Many of these patterns are related, but not fully explained, by geographic differences in use of in-person and remote testing methods.

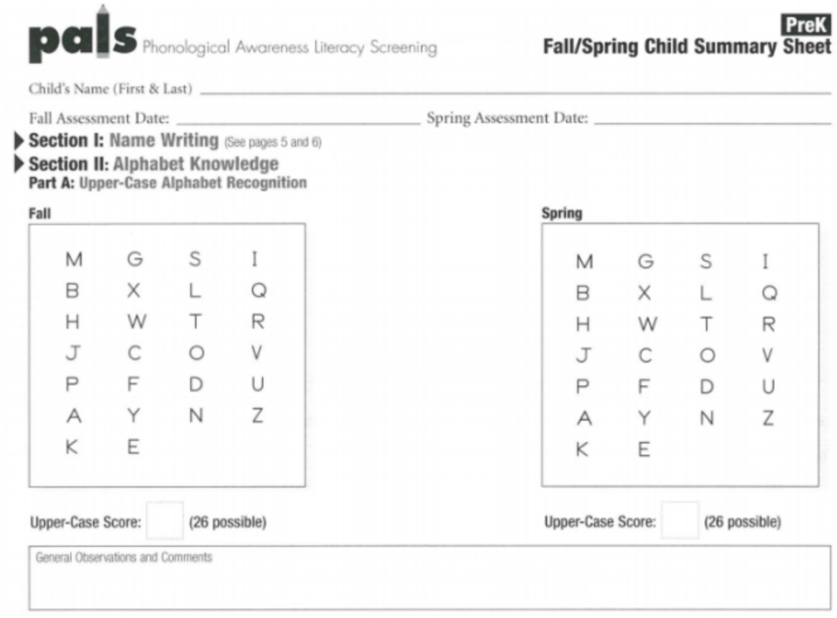
APPENDIX B: PHONOLOGICAL AWARENESS LITERACY SCREENING EXAMPLES

Part of VKRP's programming consists of a partnership with the PALS which assesses literacy skills that are predictive of future reading success to provide a more comprehensive picture of students' school readiness skills. PALS for pre-Kindergarteners (PALS-PreK) is administered by teachers to students (*See Appendix B*). Some tasks are conducted in small groups while others are administered individually as determined by schools and/or divisions. PALS-PreK is administered twice a year: fall and spring. General guidelines require that divisions begin screenings six weeks after the start of the AY. Once initiated PALS-PreK should be completed in a contiguous two-week period. Depending on student abilities the total assessment can take anywhere between five to thirty minutes to complete per student. Currently, PALS is used by 131 of 132 school divisions as a screening tool for students in K-3 for Virginia's Early Intervention Reading Initiative (EIRI).



Lower-Case Alphabet Recognition

s	g	m	i
b	r	l	f
h	w	t	q
j	c	o	v
p	x	d	u
a	y	n	z
k	e		



pals Phonological Awareness Literacy Screening

PreK
Fall/Spring Child Summary Sheet

Child's Name (First & Last) _____

Fall Assessment Date: _____ Spring Assessment Date: _____

▶ Section I: Name Writing (See pages 5 and 6)

▶ Section II: Alphabet Knowledge

Part A: Upper-Case Alphabet Recognition

Fall

M	G	S	I
B	X	L	Q
H	W	T	R
J	C	O	V
P	F	D	U
A	Y	N	Z
K	E		

Upper-Case Score: ____ (26 possible)

Spring

M	G	S	I
B	X	L	Q
H	W	T	R
J	C	O	V
P	F	D	U
A	Y	N	Z
K	E		

Upper-Case Score: ____ (26 possible)

General Observations and Comments

Beginning sound awareness

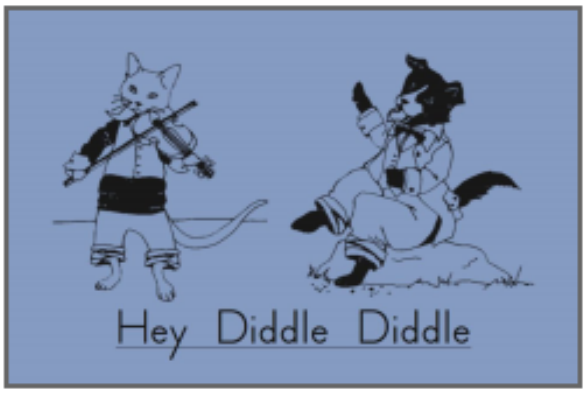
Beginning Sound:	/M/	/S/	/B/
Practice Items:	man	sock sink	bag

1. +	milk	6. +	sick
2. −	ball	7. +	meat
3. +	six	8. +	bear
4. −	bird	9. +	mop
5. −	map	10. −	sad

Beginning Sound Score: 6 (10 possible)

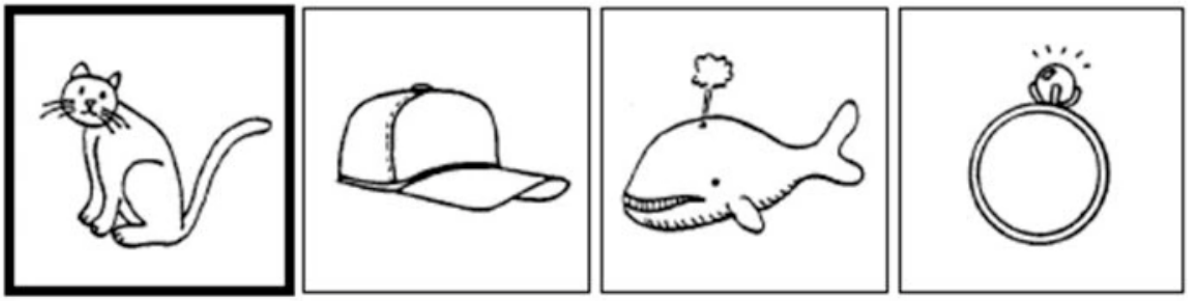
Print and Word Awareness

+/-	
+	1. points to the words in the title
−	2. points to each of the three words in the title
+	3. points to the word *Hey*
+	4. points to both words, *Diddle* and *Diddle*
+	5. points to word *The*
+	6. left to right directionality
+	7. moves finger along line of print
+	8. identifies either letter, *A* or *O*
−	9. each printed word matched 1-to-1 with each spoken word in order
−	10. points to white space between *The* and *End*



Print and Word Awareness Score: 7 (10 possible)

Rhyme Awareness



+/-				
+	1. **mop**	**top**	bike	can
+	2. **sled**	kite	**bed**	fruit
+	3. **bee**	flag	**tree**	cup
−	4. **cake**	(bell)	fruit	**snake**
+	5. **moon**	**spoon**	cat	sock
+	6. **fox**	wall	rain	**box**
+	7. **man**	book	**can**	pig
+	8. **ring**	**swing**	bed	mop
+	9. **clock**	road	pen	**sock**
+	10. **rain**	bell	**train**	box

Rhyme Awareness Score: 9 (10 possible)

APPENDIX C: VKRP'S CHILD BEHAVIOR RATING SCALE EXAMPLE

The Child Behavior Rating Scale (CBRS) contributes to Virginia's assessment of school readiness by measuring non-academic indicators of academic success otherwise known as SEL. This short, 17-question, assessment (that follows) is completed by teachers outside of instruction time, at least four weeks into the AY and take about three minutes per student. Teachers rate each item on a scale from 1 to 5 depending on how often a teacher perceives a child exhibiting said behavior and enter the assessment into an online system. CBRS seeks to measure teacher's perceptions of student's behaviors, interactions, and engagement with instructional material and tasks ("Social Skills and Self-Regulation (CBRS)," 2020). Specifically, these include: ten questions associated with self-regulation (e.g., level of concentration, ability to follow directions) and seven items regarding social skills (e.g., cooperation and compliance) that are indicative of school readiness (Alzahrani et al., 2019; Camilli et al., 2010; McCormick et al., 2015). Currently, CBRS is used by all public Kindergarten teachers and was piloted by a group of pre-K teachers in the 2020-2021 AY (James, 2020). Funding for CBRS is provided through state appropriation funds through the VDOE to researchers at UVA to continue implementation of VKRP.

Classroom Self-Regulation

Item 15	Observes rules and follows directions without reminders
Item 20	Completes learning tasks in an organized way
Item 21	Completes tasks successfully
Item 22	Attempts new and challenging tasks
Item 23	Concentrates when working, not easily distracted
Item 24	Responds to instructions and begins appropriate task
Item 25	Takes time to do their work
Item 27	Finds and organizes materials
Item 28	Sees own errors on task and corrects them
Item 29	Returns to unfinished tasks after interruption

Social Skills (Interpersonal Skills)

Item 3	Willing to share
Item 5	Expresses hostility–Verbally
Item 6	Expresses hostility–Physically
Item 7	Cooperates with playmates
Item 8	Takes turns without being told to do so
Item 13	Complies with adult directives–With little or no resistance
Item 16	Does not fuss when doesn't get teacher's attention

Remaining Items

Item 1	Joins in play with others
Item 2	Comforts peers
Item 4	Plays with other children
Item 9	Offers suggestions for play
Item 10	Suggestions for play are accepted by other children
Item 11	Engages in pretend play
Item 12	Resolved potential social conflicts
Item 14	Initiates social interaction with adults
Item 17	Can deal with normal criticism or teasing
Item 18	Tried to solve a problem before asking for help
Item 19	Shows satisfaction when completes a project
Item 26	Feels they can cope well with classroom situations
Item 30	Interested in trying new activities, games, etc.
Item 31	Conveys confidence about being able to succeed
Item 32	Shows enthusiasm for activities

APPENDIX D: COST ESTIMATE CALCULATIONS

ALTERNATIVE 1 COST CALCULATIONS:

*The cost of expanding CBRA was calculated as follow*s:

Average Salary of Public PK Teacher in VA: $37,880 (Miller & Yevak, 2018)

Total days of Instruction in VA Public Schools: 180

$37,880 / 180 = $210.44 per day

Total hours of paid time for PK Teach: 8 hours per day

$210.44 / 8 = $26.31 per hour

Total minutes in an hour: 60

$26.31/60 = $0.44 per minute

Total hours of instruction required by EIRI: 2.5 hours per week

$0.44*2.5 = $65.82

Estimated total number of VA students in Publicly funded PKs Needing EIRI: 9,116*

$65.82*(9,116/5) = $120,003.02**

**Estimated based on the percentage of K and 1st Grade students identified by PALS in the 2019-2020 AY*

***Since EIRI's teacher: student ratio is 1:5 this time estimate is per five students*

ALTERNATIVE 2 COST CALCULATIONS:

*The cost of expanding CBRA was calculated as follow*s:

Average Salary of Public PK Teacher in VA: $37,880

Total days of Instruction in VA Public Schools: 180

$37,880 / 180 = $210.44 per day

Total hours of paid time for PK Teacher: 8 hours per day

$210.44 / 8 = $26.31 per hour

Total minutes in an hour: 60

$26.31/60 = $0.44 per minute

Max time it takes to administer and submit CBRS to PALS online portal: 3*

$0.44*3=$1.32 per CBRS assessment

Average number of Students Enrolled in VA Publicly funded PK: 33,514**

$1.32*33,514= $44,238

**Estimated between 1-3 minutes but taking max to produce a high estimate of cost*

***Excludes enrollment totals from 2019-2020 AY*

APPENDIX E: DATA ANALYSIS SOURCES

Below are the primary data basis used in my analysis:

Database	Description
Virginia Department of Education Fall Membership Report	The VDOE released official public school enrollment data in November of each year. For the purposes of this report the author analyzed data from the 2014-2015 AY through the 2019-2020 AY to understand 5-year enrollment trends and percentage enrollment drops relative to average enrollment in grades PK and KG as well as raw declines in enrollment from last AY to this AY.
Kids Count Data	This database is a project of the Annie E. Casey Foundation and the premier source of data on children and families. Each year, the Foundation produces a comprehensive report that assesses child well-being in the United States. For the purposes of this report the author analyzed Virginia-specific data on access to high-quality ECCE programs relative to national averages.
What Works Clearing House	The What Works Clearinghouse is an investment of the Institute of Education Sciences (IES) within the U.S. Department of Education, established in 2002. WWC reviews existing research on different programs, products, practices, and policies in education. Their goal is to provide educators with information needed to make evidence-based decisions. For the purposes of this report, WWC was used to studies and meta-analysis that contributed to the development of the policy alternatives herein.

TABLES:

TABLE 1. VIRGINIA FALL MEMBERSHIP DATA PRE-KINDERGARTEN ENROLLMENT TRENDS

AY	Grade PK	Raw Decline	% Enrollment Decline from Average AY Totals
2015-2016	33,401	617	1.84%
2016-2017	33,230	-171	-0.51%
2017-2018	33,562	332	0.99%
2018-2019	33,733	171	0.51%
2019-2020	34,373	640	1.91%
2020-2021	27,986	-6,387	-19.06%

TABLE 2. VKRP READINESS DATA FOR SPRING 2020

The Readiness Data

In Spring 2020, teachers assessed the four-year-old children using the preschool versions of the VKRP measures. Benchmarks are set based on research suggesting the levels of skills expected in these areas for children at this age.

	Benchmark	Class Average	Children Met or Exceeded Benchmark
Math (number sense, operations, shape, space, and pattern) [2]	15	28.6	10 out of 10 (Scores ranged from 23-31 out of 35)
Literacy (name writing, alphabet, sounds, print and word, rhymes) [3]	There are 8 sections. Each has its own benchmark.		9 out of 10 children met or exceeded the benchmark in all 8 sections. 1 child met or exceeded the benchmark in 6 out of the 8 sections.

		Pre COVID-19 Crisis		During COVID-19 Crisis	
	Benchmark	Classroom Average	Children Met or Exceeded Benchmarks	Classroom Average	Children Met or Exceeded Benchmarks
Self-Regulation (control of own attention, emotions, behaviors) [4]	3.4	4.5	9 out of 9	3.5	6 out of 10
Social Skills (cooperating, positive expression of emotions, conflict resolution) [5]	3.8	4	6 out of 9	3.34	3 out of 10

Key Findings

- **All** preschool children **exceeded** the benchmark for math.
- 9 out of 10 **met or exceeded** all literacy benchmarks.
- **All** children **met or exceeded** the benchmarks for self-regulation (prior to COVID-19).
- All preschool children receiving scholarships **met or exceeded** the benchmarks in math, self-regulation, and social skills.
- Children need extra support to develop their social and self-regulation skills, especially during COVID-19.

TABLE 3. TABLE FROM NATIONAL EARLY LITERACY PANEL'S META-ANALYSIS ON EARLY LITERACY INTERVENTIONS

Conventional reading and writing skills that are developed in the years from birth to age 5 have a clear and consistently strong relationship with later conventional literacy skills. Additionally, six variables representing early literacy skills or precursor literacy skills had medium to large predictive relationships with later measures of literacy development. These six variables not only correlated with later literacy as shown by data drawn from multiple studies with large numbers of children but also maintained their predictive power even when the role of other variables, such as IQ or socioeconomic status (SES), were accounted for. These six variables include

- alphabet knowledge (AK): knowledge of the names and sounds associated with printed letters
- phonological awareness (PA): the ability to detect, manipulate, or analyze the auditory aspects of spoken language (including the ability to distinguish or segment words, syllables, or phonemes), independent of meaning
- rapid automatic naming (RAN) of letters or digits: the ability to rapidly name a sequence of random letters or digits
- RAN of objects or colors: the ability to rapidly name a sequence of repeating random sets of pictures of objects (e.g., "car," "tree," "house," "man") or colors
- writing or writing name: the ability to write letters in isolation on request or to write one's own name
- phonological memory: the ability to remember spoken information for a short period of time.

FIGURES

FIGURE 1. FALL MEMBERSHIP (ENROLLMENT) DATA FOR THE 2019-2020 AND 2020-2021 AYS FOR PUBLICLY FUNDED PRE-KINDERGARTEN BY RACE

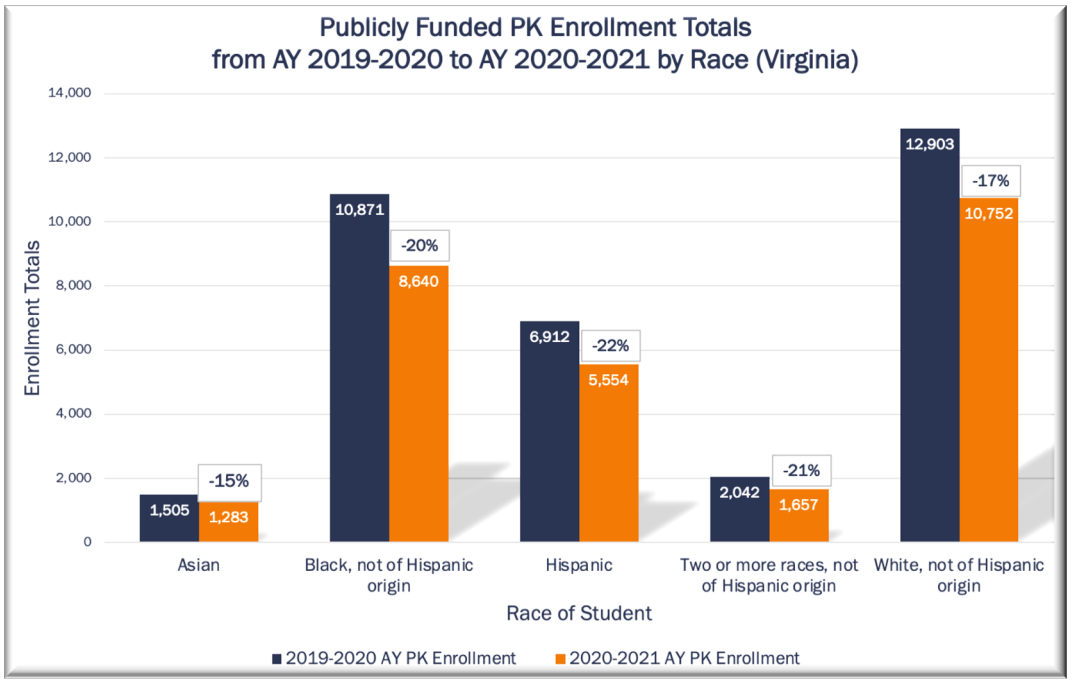


FIGURE 2. FALL MEMBERSHIP (ENROLLMENT) DATA FOR THE 2019-2020 AND 2020-2021 AYS FOR VIRGINIA'S PUBLICLY FUNDED PRE-KINDERGARTEN AND KINDERGARTEN

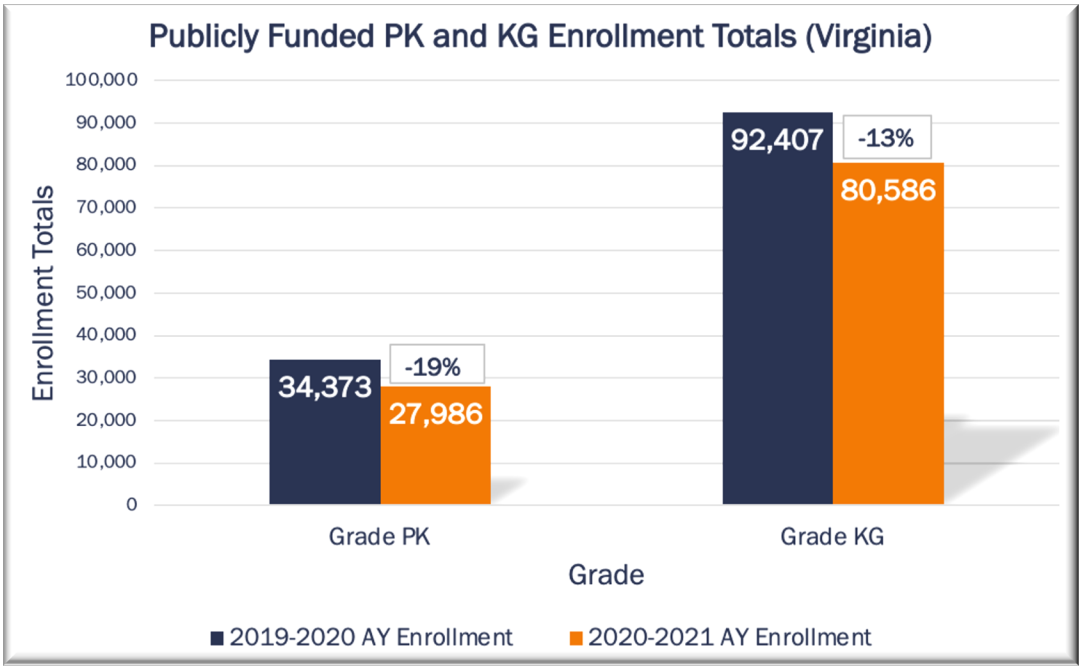


Figure 3. Fall Membership (Enrollment) Data for the 2019-2020 and 2020-2021 AYs for Virginia's Publicly Funded Pre-Kindergarten by Economically Disadvantaged Status of Student's Household

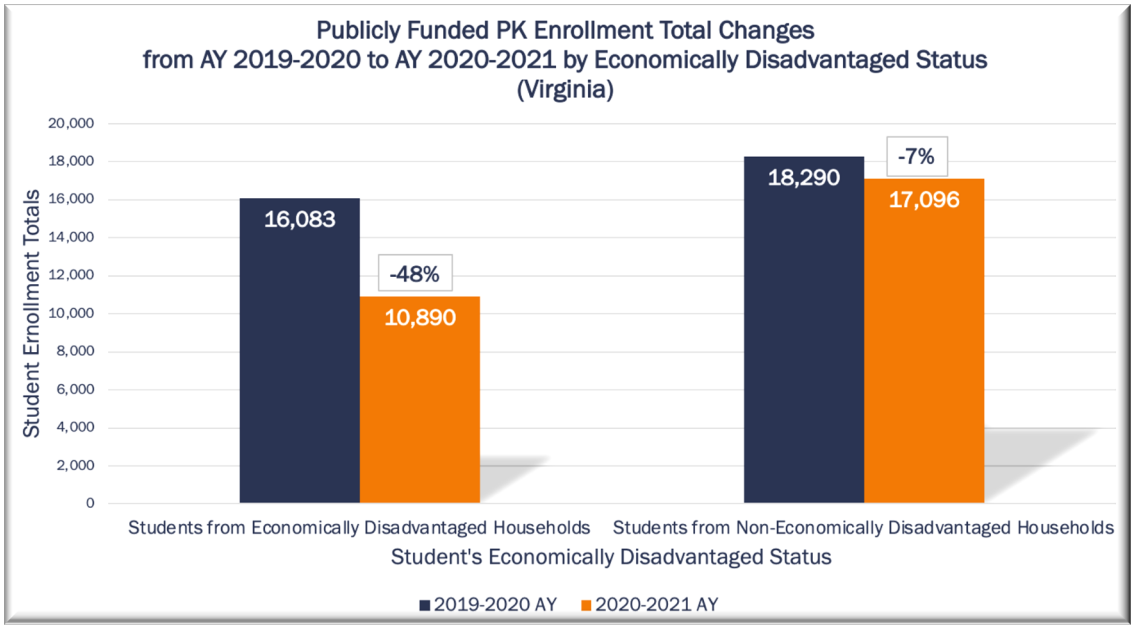


Figure 4. Fall Membership (Enrollment) Data for the 2019-2020 and 2020-2021 AYs for Public Kindergarten by Race

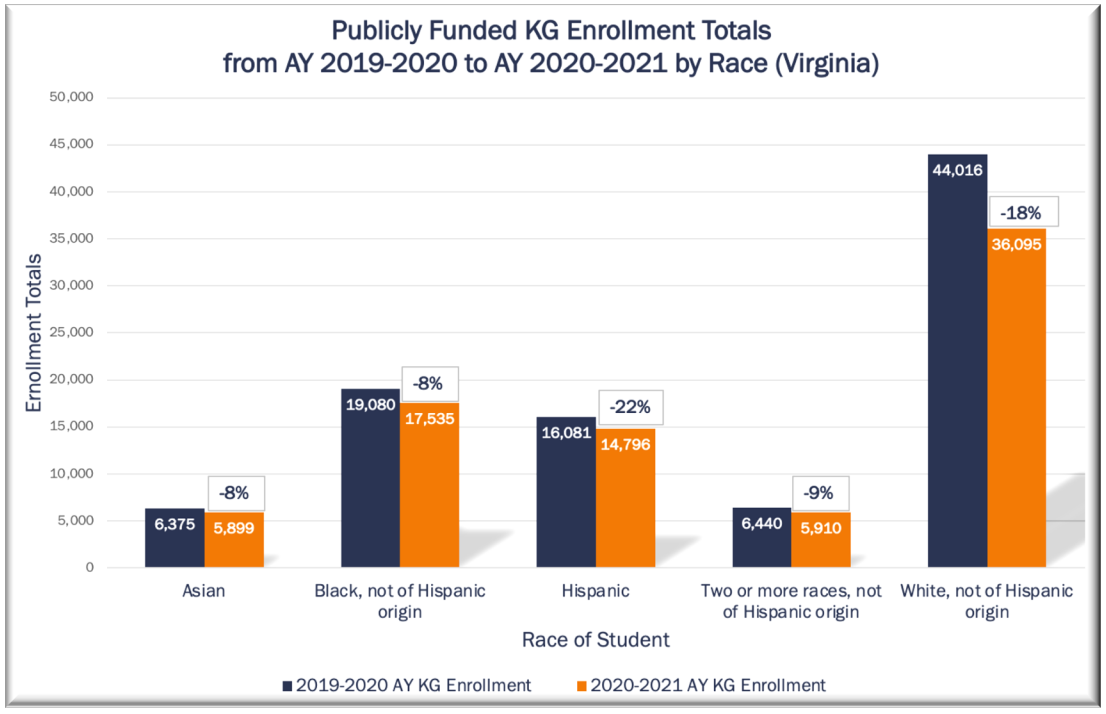


FIGURE 5. FALL MEMBERSHIP (ENROLLMENT) DATA FOR THE 2019-2020 AND 2020-2021 AYS FOR PUBLIC PRE-KINDERGARTEN BY ENGLISH LEARNING STATUS OF STUDENT

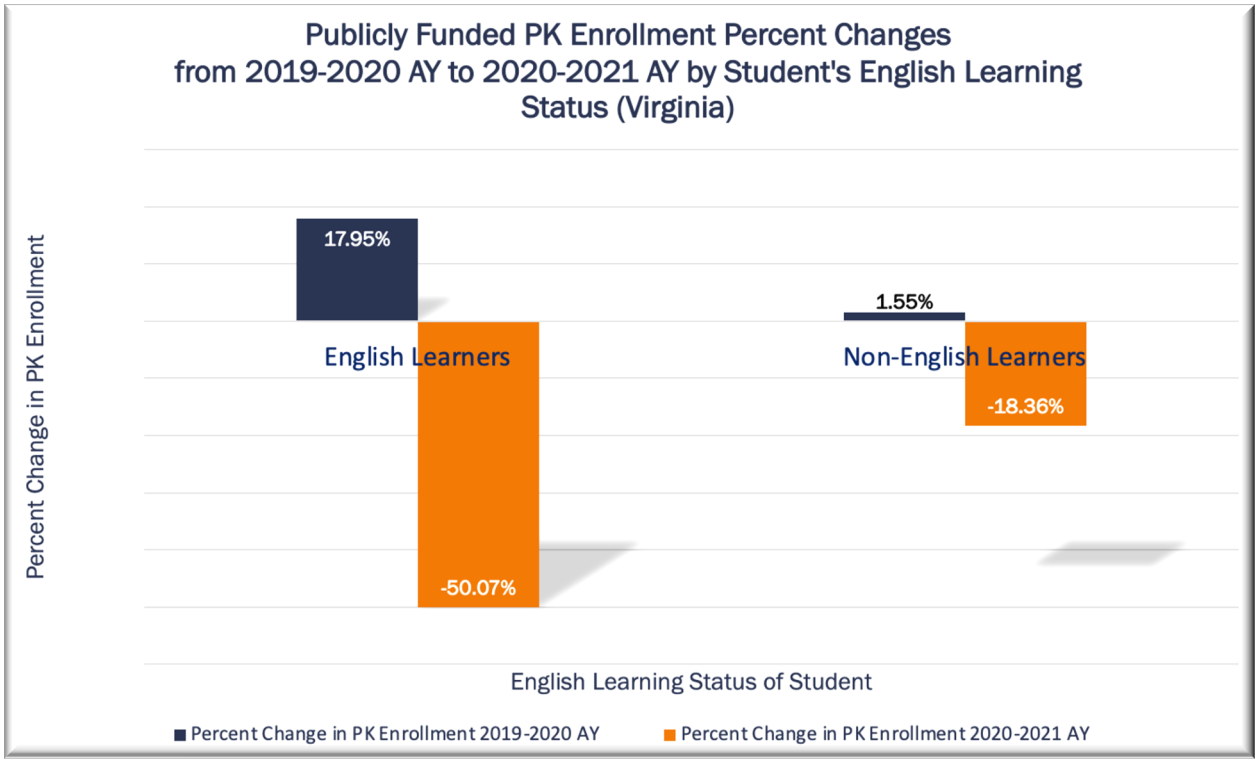


FIGURE 6. PHONOLOGICAL AWARENESS LITERACY SCREENING SPRING 2020 REPORT, VIRGINIA

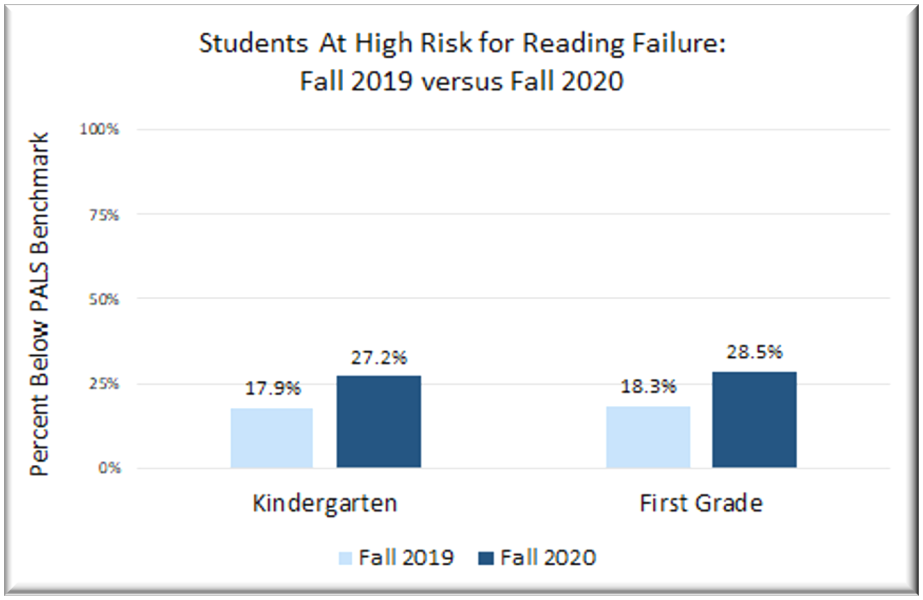


FIGURE 7. BLACK AND HISPANIC STUDENTS GET LOWER QUALITY PRE-K (ROTHWELL, 2016)

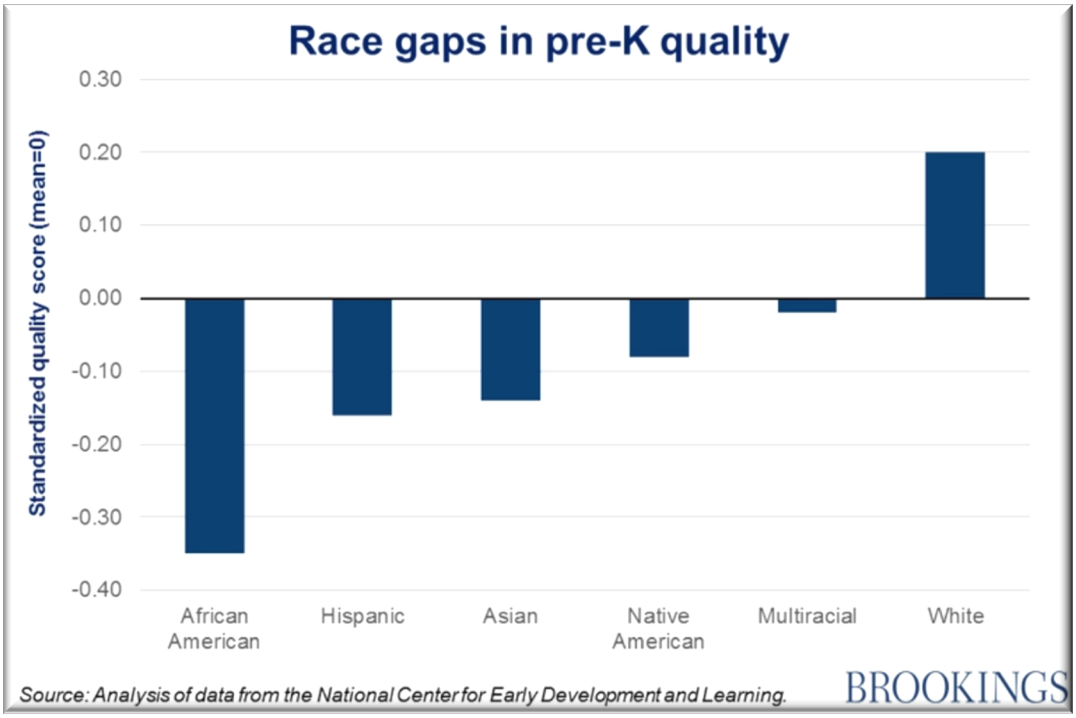


***FIGURE 8.* RETURNS TO A UNIT DOLLAR INVESTED ARE HIGHEST IN EARLIEST YEARS(HECKMAN, 2017)**

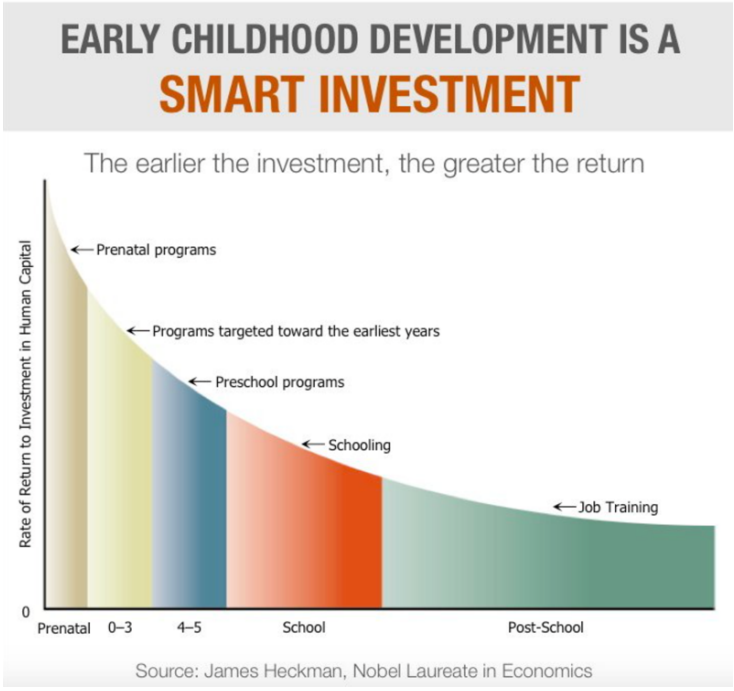


FIGURE 9. BROOKINGS MODEL PROJECTS LONG-TERM LEARNING LOSS AMONG NATIONAL GRADE 3 COHORT DUE TO COVID-19 LEARNING SHOCK

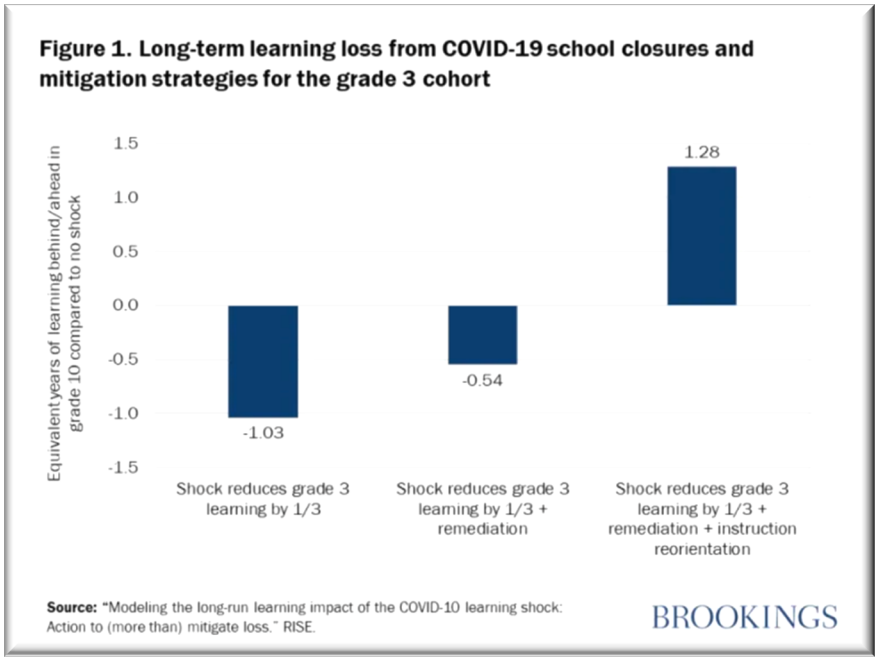


FIGURE 10. HARVARD STUDY FINDS YOUTH IMPACTED BY HURRICANE KATRINA EXPERIENCED INCREASED LEVELS OF DISTRESS LONG AFTER

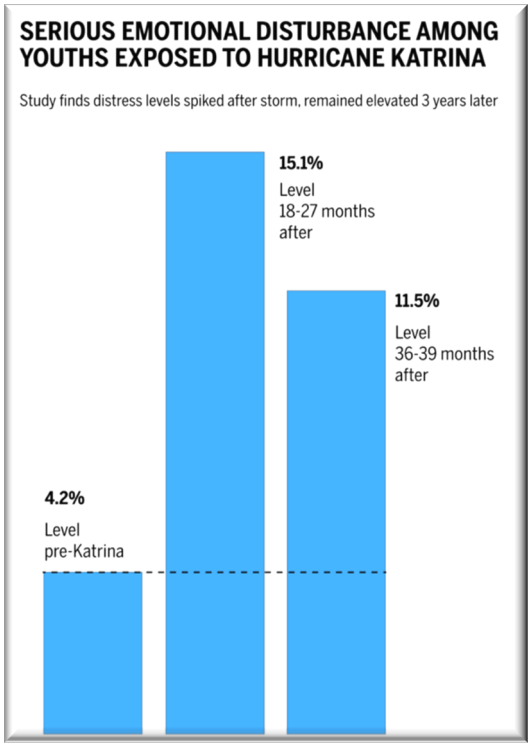


FIGURE 11. FROM CASEL'S *THE MISSING PIECE* PROVIDING MORE INFORMATION ON SEL

SURVEY FINDINGS 1

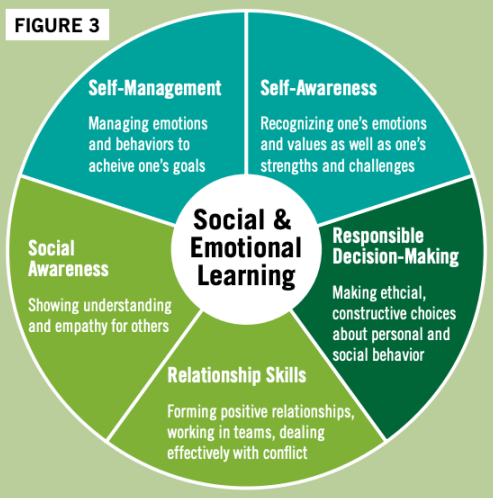
WHAT IS SOCIAL AND EMOTIONAL LEARNING?

Social and emotional learning (SEL) involves the processes through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions.[33] SEL programming is based on the understanding that the best learning emerges in the context of supportive relationships that make learning challenging, engaging, and meaningful. Social and emotional skills are critical to being a good student, citizen, and worker; and many different risky behaviors (e.g., drug use, violence, bullying, and dropping out) can be prevented or reduced when multiyear, integrated efforts are used to develop students' social and emotional skills. This is best done through effective classroom instruction; student engagement in positive activities in and out of the classroom; and broad parent and community involvement in program planning, implementation, and evaluation.[34] Effective SEL programming begins in preschool and continues through high school.

CASEL has identified five interrelated sets of cognitive, affective, and behavioral competencies (Figure 3), which framed the survey development (for additional information on CASEL, please see Appendix 2). The definitions of the five competency clusters for students are:

- **Self-awareness:** The ability to accurately recognize one's emotions and thoughts and their influence on behavior. This includes accurately assessing one's strengths and limitations and having a well-grounded sense of confidence and optimism.
- **Self-management:** The ability to regulate one's emotions, thoughts, and behaviors effectively in different situations. This includes managing stress, controlling impulses, motivating oneself, and setting and working toward personal and academic goals.
- **Social awareness:** The ability to take the perspective of and empathize with others from diverse backgrounds and cultures; to understand social and ethical norms for behavior; and to recognize family, school, and community resources and supports.
- **Relationship skills:** The ability to establish and maintain healthy and rewarding relationships with diverse individuals and groups. This includes communicating clearly, listening actively, cooperating, resisting inappropriate social pressure, negotiating conflict constructively, and seeking and offering help when needed.
- **Responsible decision-making:** The ability to make constructive and respectful choices about personal behavior and social interactions based on consideration of ethical standards, safety concerns, social norms, the realistic evaluation of consequences of various actions, and the well-being of self and others.

FIGURE 3



The short-term goals of SEL programs are to (1) promote students' self-awareness, self-management, social-awareness, relationship, and responsible decision-making skills; and (2) improve student attitudes and beliefs about self, others, and school. These, in turn, provide a foundation for better adjustment and academic performance as reflected in more positive social behaviors and peer relationships, fewer conduct problems, less emotional distress, and improved grades and test scores (Figure 4).[35]

FIGURE 4
Outcomes Associated with the Five Competencies

16 The Missing Piece

Figure 12. Enrollment changes in Virginia public schools by mode of instruction