LEARNING, JOY, AND EQUITY:

A New Framework for Elementary Education

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INTRODUCTION AND CONTEXT

Much has been written about the impact of the COVID-19 pandemic on students' academic performance and mental health, with overwhelming coverage of "learning loss" and "learning recovery." Well-documented consistent data and decades of research suggest that education systems — since their inception — were not working for large swaths of American students. The pandemic lay bare and exacerbated gaps and challenges that have always existed — by design, by practice, or as a lingering relic of the past. Still, undeniably, virtual schooling was difficult for most families, and hundreds of thousands of children lost family members, exposing children to trauma, grief, and loss, which presented schools with an urgency for mental health support. Additionally, at the end of the 2019–2020 school year, when schools closed during the pandemic, some families saw for the first time how their children experienced school, prompting many to transition to homeschooling, disproportionately families of color.[1] For example, Black families' decision to homeschool increased from 3.3 percent to 16.1 percent.[2] **As we move into post-pandemic recovery, it is critical to reflect and think transformatively about what schools need to do differently, in partnership with families and communities, centering children, their joy, their curiosity, and their rights to an enriching, stimulating, culturally affirming educational experience.**

Children are born natural scientists who are eager to learn about and make sense of the world around them. Starting early in infancy and continuing throughout childhood they are keen observers and experiment with the world, people, and objects around them.[3]

Many relevant parties in the education system have emphasized kindergarten readiness, when in fact, robust bodies of developmental research and neuroscience indicate that children are born ready and eager to learn. For optimal learning, children need a safe space with trusted, nurturing adults. In the earliest years, these adults are often parents, other family members, and early childhood educators. By the time children enter kindergarten, that circle of adults grows, often along with the physical space children navigate. Kindergarten and the elementary years are foundational in children's lives, development, and academic trajectories. These years set the tone for children's future learning, and they present a critical opportunity to optimize children's endless curiosity and natural love of learning.

Many schools are, in fact, optimizing this period to provide engaged, hands-on, culturally-affirming learning opportunities for young learners. Unfortunately, others are not — for a myriad of reasons, including problematic ideologies that are rooted in history but persist today.[4] There is a long and painful history of systematic exclusion and marginalization in our nation's education systems that has disadvantaged children from marginalized communities. Examples abound. Long before public schools were initiated, anti-literacy laws were established to make it illegal for enslaved Black people to read.[5] Starting in the late 1800s and extending well into the 20th century, thousands of Indigenous children were taken from their families against their will and forcibly placed in boarding schools. At these schools — whose explicit goal was to extinguish Indigenous cultures and languages[6] — children also suffered trauma and abuse. Over the course of the 20th century, as a result of long and hard fought civil rights efforts, public education became more available to children from each of these groups — but for Black children and other children of color, as well as children with disabilities, there remains de facto segregation in education and inequitable resource distribution.

Rooted in this history, stark inequities in resources, learning opportunities, classroom experiences, and educational outcomes in today's U.S. education system persist, disproportionately impacting children from historically marginalized communities, including Black, Latine(o/a), Indigenous, Asian American and Pacific Islander children; children with disabilities; and emergent bilinguals, among others. The National Academies of Sciences, Engineering, and Medicine recently published a report on closing opportunity gaps for children birth to age eight, which documented many of these contemporary inequities through a historically informed lens.[7] Research summarized in the report indicates that schools serving primarily children of color are often less resourced, spend less on construction and facility maintenance

and renovations, have less experienced teachers, and have fewer opportunities for enrichment. Many children with disabilities still receive their services in self-contained classrooms regardless of their needs, including more than half of preschoolers (with disabilities).[8] The nation's large and growing emergent bilingual child population still lacks access to dual language education, with recent data indicating that over 90% of emergent bilingual children lack access to dual language learning.[9] Additionally, researchers find that Black and Latine(o/a) children are less likely to be referred to specialized programs, like Gifted and Talented Education (GATE) programs, even when they have the same grades and test scores as their White peers.[10,11] Research suggests that biases help explain this dynamic, across identification and enrollment. Decades of data and research also indicate that Black children continue to be excluded from learning settings via expulsions and suspensions at starkly disproportionate rates. Disparate discipline practices persist even though there is no research to suggest worse behavior and many studies indicate bias in behavior-related decision making.[12]

These challenges are layered on top of and associated with ideologies that maintain that Black, Latine(o/a), and Indigenous children and other children of color lack strengths and brilliance, and need remediation in kindergarten. As a result of this misguided thinking, many schools call for standardized instruction that focuses on rote memorization and standard assessments in English that fail to capture the full array of children's strengths and skills.

Too often, school days are filled with arbitrary rules — how, when, and where to sit, walk, talk, and eat — that result in removing child agency and controlling movement, with little or no benefit to actual learning. These rules clash with research on child development and place unrealistic and unfair expectations on children's behavior, resulting in children failing to meet these expectations and subsequent harsh discipline. These dynamics are layered on and connected to a robust body of research documenting the various forms of bias that permeate classroom walls, impacting Black students the most.[13] Studies have found that Black children are rated as being older than they are,[14] are scrutinized more in their play,[15] are rated as needing less support,[16] and are generally less likely to be given the benefit of the doubt and more likely to be labeled "troublemakers" by school administrators.[17]

Layered on these biases is the continued "pushing down" of pedagogical and instructional content created for older children to preschoolers, Kindergarteners, and first graders. Inequitable experiences in kindergarten too often follow from and are followed by poor quality experiences in the early education and early grade systems. Well-established

data indicate that children from historically marginalized communities have less *access* to high-quality early learning opportunities[18] and have poorer *experiences* within early learning settings.[19] These inequities in educational opportunity are reflected across and compounded by deep racial and economic inequities across all U.S. systems that impact virtually every domain of life — health, financial stability, economic mobility, mental health, interactions with the criminal justice system, and so on.

Despite the education system's shortfalls and historical roots, innovation and child-centered learning is happening in many elementary schools across the country. In fact, there are hundreds of school and district leaders and administrators trying to do better, changing policies, investing in supports, and making a difference in the lives of their students. There are thousands of educators across the early childhood and K–12 education continuum who deeply care about their students. Spotlighting, building on, and scaling this work is necessary.

THIS REPORT

Just over four years ago, the COVID-19 pandemic caused the world to shut down and left a wake of destruction, with millions dead and millions mourning their dead — deeply impacting everyone, including our youngest children. There has been nonstop public discourse in education systems about attendance and learning loss/recovery, but most proposed responses have been repurposed, rather than transformative. The time to reflect and truly rebuild an education system for all children, including and especially those who have been historically and contemporarily marginalized by education systems, is now.

Many recent efforts, policies, research studies, and programs have moved the education field forward in understanding learning, development, and academic growth in U.S. schools. For example, researchers have done deep work on child-centered pedagogies,[20] culturally sustaining pedagogies,[21] and inclusive education that applies a universal design for learning (UDL).[22] Other researchers have completed extensive work on preschool to third grade systems building.[23] Curriculum and assessment are robust fields of their own.[24] Contemporary work on assessment is moving the field forward in holistic, dynamic, bias-conscious assessment.[25] This includes efforts by the U.S. Department of Education to encourage states to develop high-quality, low-stakes assessments that can help guide instruction and meet student needs.[26]

This report proposes a new framework for elementary education that builds on, and is informed by, previous foundational efforts, centered on children and the ways we know children learn, and disrupting well-documented, historically rooted, and contemporarily entrenched biases in learning systems. While there is no single ideal elementary school experience, there are core ingredients to which every child needs and deserves access. Guided by research, data, learnings from schools across the United States, parent and family voice, and a desire to design child-centered, joyful, and effective spaces for learning, we provide a framework that consists of 14 core ingredients.

In the sections that follow, we explain each ingredient, briefly review its research base, provide a list of actionable, observable core indicators, and highlight bright spots of implementation. We focus our attention at the school level for this report, but we recognize that district, state, and federal levers are necessary to consider, as they can accelerate, enable, or inhibit progress altogether.

14 CORE INGREDIENTS

1. Transformative leadership

2. A child-centered vision and philosophy that prioritizes shared learning, equity, community, and joy

3. Explicit attention to the experiences and outcomes of children from historically marginalized communities

4. Universal design built into each aspect of schooling

5. Blended pedagogies that align with the science of child development and are culturally sustaining

6. Research-informed, community relevant, individualized instruction and interdisciplinary curricula

7. Dual language education to promote bilingualism, biliteracy, biculturalism, and positive self-identity and to meet the needs of English learners

8. Child groupings small enough to promote deep relationships, multi-age peer learning, individualized instruction, and effective learning

9. A well-prepared, fully supported, diverse teacher workforce

10. Culturally-grounded authentic family and community engagement that attends to the whole child and the whole family

11. A school climate that embraces children's identities, combats racism and bias, and prioritizes mental health and well-being

12. Resources and policies that promote health, well-being, nutrition, and movement

13. Child-, classroom-, and school-level data used to individualize instruction, tailor professional development, and inform planning and policy development

14. Safe, healthy, aesthetically pleasing, child-centered learning environments

A BRIEF WORD ON EARLY GRADE FRAMEWORK ENABLERS

While public education is delivered and primarily overseen at a very local level, in many instances, the school building itself, local school districts, and state officials can play a significant role in spurring school action in one direction or another. These officials can accelerate, enable, sustain, or inhibit progress in various ways, by setting local and state education priorities, enacting policy, setting requirements, providing guidance, ensuring funding adequacy, creating grant opportunities, and engaging in research. Key accelerators and enablers for the 14 core ingredients include:

- Ensuring resource allocation is equitably directed toward historically and contemporarily marginalized students.

- Establishing policies that enable, promote, and resource schools to close opportunity gaps, such as dual language education, high quality inclusion of students with disabilities, school climate and mental health interventions, equitable access to enrichment programs, and adjusting school start times as needed to promote rest, focus, concentration, and academic performance.

- Building federal, state, and local policies that embed the closing of opportunity gaps and outcome disparities as core expectations of schools, with resources, tracking, and accountability structures in place to ensure progress.

- Ensuring adequate resources for pre-Kindergarten (pre-K) and the early grades to ensure developmentally responsive education systems — for example, providing paraprofessionals in all Kindergarten classrooms and equipping classrooms with materials to facilitate child-directed and exploratory hands-on activities and intentional playful learning.

- Providing support and professional learning for school administrators on the science of child development, child-centered pedagogies and approaches, and the ways in which bias manifests and permeates learning systems. We cannot assume that administrators already know and understand how the youngest students learn best or how to incorporate culturally and linguistically sustaining practices.

- Allocating time for school administrators and teachers to collaborate and align educational strategies and resources within and across grades.[27]

- Ensuring that teachers and staff are fairly compensated in terms of wages, benefits, and working conditions.

- Meaningfully engaging families in district-level decision-making processes and requiring and monitoring professional development and plans for authentic family engagement.

- Building inter-office cooperation and collaboration, as well as interagency collaboration between offices responsible for or engaged in work that touches pre-K, Kindergarten, and the early grades.

THE EVERY STUDENT SUCCEEDS ACT

For more than half a century, the Elementary and Secondary Education Act has worked to expand and protect educational opportunities for students. The statute has been modified several times, most recently in 2015 through the Every Student Succeeds Act (ESSA).

The programs funded through ESSA can be leveraged to advance each of the 14 ingredients identified in our framework for success in elementary schools. School and district leaders should reference the documents that guide the administration of that law, including guidance on how to:

- Implement comprehensive improvement efforts in schools with high concentrations of children from families with low incomes[28]

- Build systems of support for school leaders and educators[29]

- Advance equity of opportunity for multi language learners[30]

- Expose children to well-rounded, holistic educational opportunities beyond the tested subjects[31]

- Grow opportunities for our youngest learners,[32] including through the expansion of high-quality preschool programs in a system of mixed delivery[33]

- Create safe, healthy, and supportive learning environments[34]

- Expand access to high-quality before, after, and summer learning opportunities[35]

- Advancing equitable school funding[36]

CORE INGREDIENTS AND CONCRETE INDICATORS

1 Transformative leadership

While the underlying goals of schools have changed and expanded over the past century from a "factory model" approach emphasizing rule-following and rote knowledge to one focused on critical thinking and empathy for an inclusive global society, one thing is clear: effective school leadership is critical for change to occur and be sustainable. From numerous reports[37] to meta-analyses,[38] leadership always appears as an essential feature necessary for transformational change, whether focused on student-centered learning, workforce support, capacity building, parent-community engagement, or social justice. Indeed, school leadership teams, together with families and communities, establish school-wide policies, set the school's climate and culture, forge critical partnerships with the community, enable effective and culturally sustaining instruction, support their staff — including their continuous development and their well-being, and invest resources in areas and students with the greatest needs first. Leadership teams should include administrators and directors, educator and family representatives, instructional support staff, data evaluators, and others as appropriate to community and school context (e.g., directors of diversity, equity, and inclusion; directors of family partnerships; directors of disability services; directors of multilingual learners). Transformational school leadership that is inclusive of diverse perspectives, expertise, and lived experiences is necessary to create a shared vision and organization centered on advancing equity, uplifting student well-being, and accelerating academic growth.

☑ Having a deep understanding of child development and child centered learning.

Too often, K–12 education leaders lack a deep understanding of child development — including cognitive, social, emotional, behavioral, physical, and so on. An understanding of child development must be present in school leaders and leadership teams, and it must impact school policies and routines; discipline practices and behavioral expectations; instructional approaches and assessments; family partnerships; and an overall school culture that encourages movement, child agency, and pedagogy that is aligned with the science of child development.

☑ Creating a culture of child well-being, joy, equity, and inclusion.

Transformational school leadership moves away from the ideology of "fixing" children, families, and communities to one that understands and rectifies roots of inequities by acknowledging the role of racism and other systemic inequities based on students' and families' identities, identifying their contemporary manifestations, and investing resources and targeting supports accordingly. It prioritizes child well-being and joy, alongside academic growth, through resource allocation, school climate and policies, professional development, family partnerships, and school schedules.

☑ Strategic planning and resources for bridging opportunity and outcome gaps.

School leaders must ensure that a core expectation and function of the school is to close opportunity and outcome gaps, while nurturing joy and well-being for all children, particularly those who have been historically marginalized. This core expectation should be articulated in a strategic plan and come alive in practices and policies, and it must be accompanied by dedicated, adequate resources, including staff time and attention.

☑ **Establishing formal lines of communication and partnership processes for engaging families in decision making.**

This should include ensuring that families have all of the data that staff have about their child/ren; ensuring that families understand decision making timelines and processes; soliciting family input on school operations and priorities throughout the school year (not just at the beginning or end of the school year); partnering with families to co-create visions/missions and policies; and understanding what families need to thrive to inform community partnerships.

☑ **Establishing school policies, rules, and climate informed by development.**

Examining existing school rules, including their origin, their impact across various social demographic groups, and their developmental and cultural appropriateness is another essential function of a transformative leadership team. This is key in creating a school culture where child joy and agency is realized and where holistic well-being and academic growth are individualized and prioritized.

☑ **Supporting staff well-being and continuous professional development.**

Child well-being and academic growth in school depend on the well-being and professional expertise of the adults around them. School leaders must jointly prioritize well-being and capacity building in their teachers and support staff. Well-being includes fair compensation, time for planning, opportunities for professional growth, and a voice at the decision-making table. Continuous professional development and coaching across an array of domains is critical, including instructional and assessment practices aligned with research; culturally sustaining and child-centered pedagogies; authentic family partnerships; and supporting students' autonomy, emotion, and behavior regulation positively, not punitively.

Core Indicators

- Ensures all leaders, teachers, staff, and other employees deeply understand child development, and align practices and policies with developmental science.

- Commitment to identify the manifestations of and disrupt the impacts of racism in all aspects of the school.

- Regularly reviews policies to limit bias and discrimination in recruitment, retention, and assignments for school personnel.

- Regularly evaluates data to identify inequities in opportunity (e.g. enrichment programs) and disparities in outcomes (e.g. academic outcomes, discipline outcomes) to inform policy and practice change, and professional development.

- Provides adequate resources to promote deep learning and accelerate academic growth for all children, including distributing resources equitably to students with highest needs and who face the greatest barriers.

- Examines curriculum and assessments to ensure they are bias-conscious, inclusive, accurate in their portrayals of history, and culturally relevant.

- Works in partnership with families, educators, and community members to ensure a safe, healthy, and affirming school environment.

- Ensures teacher voice at the decision-making table and regularly solicits feedback from educators and support staff on school operations and policies.

- Ensures continuous, synchronous, and meaningful professional development for all staff, in addition to opportunities for professional growth.

- Assesses and promotes teacher well-being, compensates staff fairly, and establishes community connections to ensure staff are connected to resources as needed.

- Provides planning time for educational staff across grade levels.

- Practices collective leadership and shared responsibility with staff, families, and the community.

- Is knowledgeable of school and community history, including historical and contemporary inequities that contribute to disparate experiences and outcomes for students and families.

- Collects data, has awareness of, and is proactive in addressing various forms of bias and discrimination, including anti-Blackness; ableism; anti-immigrant sentiment; and discrimination based on students' religion, language, nationality, gender identity, or any other social identity.

- Meaningfully prioritizes children's joy, reflected in resource allocation, children's school schedules, school climate, staff support, and child and family partnerships.

② A child-centered vision and philosophy that prioritizes shared learning, equity, community, and joy

Most schools in the United States have a mission statement that is meant to inform the work a school does, why the school does it, how the school does it, and who the school does it with and for. In a recent study of more than 1,000 K–12 public school district mission statements, Odabas & Aragão[39] found that 80 percent of statements emphasized future readiness (e.g., citizenship, becoming a member of society, lifelong learning skills, 21st century skills, and college and career readiness), while just 12 percent of statements included student-centered education (e.g. considering students' aspirations/expectations, amplifying student voice, and responsive or differentiated teaching). Concepts of readiness should be deepened to include embracing and appreciating each child's development while also preparing them to become the best versions of themselves in subsequent grades. This includes opportunities to learn at their grade level, resisting pressures to rush their development to "get them ready" for the next grade.

Additionally, a school's vision and philosophy should be inclusive of every student and adult who is part of the school community. Transformative school leaders enact a collective school vision and philosophy through acknowledgement and disruption of institutional racism and solidarity with the school community. Elementary schools, then, should be guided by a school vision and philosophy rooted in revolutionary love — that is to say, an affirmation that "all humans deserve the right to dignity, freedom, and equal opportunities."[40] It is critical that elementary schools grapple with histories of exclusion and dehumanization in educational settings and have mission statements that concretely express that all children and families have the right to a high quality education, where their joy and well-being are protected from harm and trauma, their cultural and linguistic identities are honored and preserved alongside high academic expectations, and where they are afforded well-rounded education that aligns with the science of learning and development. Finally, visions and philosophies must not only live on paper or on a website; they must be actualized and reflected in policies, practices, investments, and actions from school staff and leadership.

OSBORN SCHOOL DISTRICT

Phoenix, Arizona

Osborn School District #8, a public school district in Phoenix, Arizona, is guided by a simple mission: to advance "the full potential of every child by developing emotional intelligence and academic excellence." This mission is guided by five core values: integrity, equity, joy, growth and relationships. Alongside each of these core values is a definition to support schools as they put those values into action.[41] For example, Osborn uses the following definitions:

- Integrity: Doing the right thing even when it is difficult
- Equity: "We model the justice and opportunity we expect in our community"
- Joy: Seeking "hope, beauty and fun in every day"
- Growth: The ability to be flexible, curious and to try new things
- Relationships: Rooted in community, care and collaboration

What stands out about the district's mission and core values is that they live beyond the district's website. For example, at Encanto, an elementary school in Osborn, the district's core values are front and center — beside students' artwork — when you enter the school. During student-led morning announcements, it is normal for students to engage in breathing activities together. Additionally, as part of the morning announcements, students are always reminded that lunch is being cooked with lots of love.

Core Indicators

- Engages students, families, teachers, and community members in developing the vision and philosophy of the school together

- Includes children's joy, curiosity, and holistic well-being, alongside academic growth, into the vision of the school

- Incorporates a focus on equity, inclusion, and belonging into the vision of the school

- Centers children's and families' identities and the histories of their communities, including inequities, resilience, and accomplishments

- Leverages all children's strengths and enables them to learn together, including children with disabilities and children learning English

- Assumes the competence and brilliance of all children and their families, recognizing that each has valuable expertise to contribute to the school community and the world

- Welcomes and works to build full authentic and meaningful partnerships with families actualized through school policies and procedures, classroom practices, school climate, and staff professional development

- Fosters critical thinking about social inequities and empowers children, families, and staff to be agents of positive change

> **Elementary schools should be guided by a school vision and philosophy rooted in revolutionary love — that is to say, an affirmation that "all humans deserve the right to dignity, freedom, and equal opportunities."**

③ Explicit attention to the experiences and outcomes of children from historically marginalized communities

Originally, education systems in the United States excluded most children from communities that were more broadly marginalized in society. Over time, as various groups obtained access to education, it was segregated and woefully under-resourced. This is particularly true for Black and Indigenous children, children with disabilities, and in some cases, children of Mexican and Asian descent as well. As education was forcibly desegregated after tireless civil rights efforts led by Black Americans and several legal battles, most education spaces, pedagogy, and personnel — including leaders and teachers — were openly hostile toward children from historically marginalized groups. Over time, explicit, outright exclusion via policy shifted to exclusion in practice and took a variety of forms that are unfortunately still entrenched and present in schools across the nation.

For example, a plethora of research indicates that Black children disproportionately receive harsh discipline — including suspension, expulsion, and corporal punishment — despite no evidence that they engage in worse or more frequent misbehavior.[42] Instead, evidence overwhelmingly points to systemic and individual-level biases impacting behavior perceptions and decisions[43] and creating this phenomenon. This is often referred to as "exclusion" out the back door, meaning that while Black children can enroll in schools, they are unfairly forced to leave at much higher rates than every other group.[44] Harsh discipline also impacts students before they begin Kindergarten. The most recent Civil Rights Data Collection shows that though Black children represent 17% of preschool enrollment, they account for 31% of preschoolers who receive out-of-school suspensions and 25% of those who are expelled.[45] This pattern continues into K–12, particularly for boys. In K–12, Black boys are nearly two times more likely to receive an out-of-school suspension or expulsion compared to White boys.[46] Other forms of exclusion leave Black children and other children of color out of specialized programs like Gifted and Talented Education (GATE). Research finds that even when Black and Latino children have the same grades and test scores as their White peers, they are underrepresented in GATE programs.[47]

Other children face exclusion in other ways. For example, children with disabilities — the last group of children that obtained legal access to the education system formally — are also disproportionately excluded via suspensions and expulsions. They are also starkly disproportionately subject to seclusion — the act of removing a child from class and locking them in a room alone without the ability to leave; data indicate that students with disabilities represent 17% of K–12 enrollment but 75% of all seclusion cases.[48] The Government Accountability Office conducted an investigation and found several cases of trauma and abuse through seclusion. In one case, a boy with a learning disability in elementary school was locked into a seclusion room 75 times over the course of six months, for multiple hours at a time, for whistling, slouching, and hand waving.[49] Children with disabilities also continue to face struggles to access general education settings at all, with data indicating that only 41% of preschoolers receive their services in general early learning settings and 66.7% of K–12 children spend most of their time (80% or more) in general education settings.[50] These trends follow a long and painful history of institutionalization and exclusion of children with disabilities that were commonplace less than 50 years ago and were only rolled back thanks to tireless efforts of disabled advocates. It is important to note that children who hold multiple marginalized identities — such as Black children with disabilities — often face higher rates of segregation and harsh discipline, and experience additional barriers to accessing opportunity.

Emergent bilingual children who speak languages other than English at home have historically faced, and continue to face, different forms of exclusion. Today, many children classified as English learners still receive a bulk of their education in segregated settings with other ELs and away from non-EL peers. The vast majority of ELs do not have access to bilingual or dual language education — which, assuming an English-only model, excludes them by default from being able to fully engage in instruction and curriculum.[51]

There is a need for schools to target specific attention and resources on children who have been historically and are contemporarily marginalized in each of these and other ways.

It is important for school leaders to track data trends in areas that are well established in the literature (e.g., discipline) to identify inequities in opportunity (e.g., access to gifted and talented education and dual language education) or disparities in outcomes (e.g., reading on grade level) and to make actionable plans, with accountability measures, to ensure that gaps in opportunities and outcomes are being bridged.

Core Indicators

- Establishing policies that promote mental health and child development and prohibit harsh discipline.

- Implementing dual language approaches, particularly in schools with high concentrations of children who share the same home language.

- Building recruitment and retention plans to build a workforce who speak the language of children in the community.

> There is a need for schools to target specific attention and resources on children who have been historically and are contemporarily marginalized.

- Ensuring inclusion of children with disabilities is the default; ensuring families understand their rights and that IEP teams understand federal laws, policies, and the research behind inclusion of children with disabilities

- Ensuring teachers are prepared to support individualized instruction for students with disabilities, including bilingual children with disabilities.

- Providing ongoing support for professionals, including required onboarding training and ongoing training and professional development on systemic racism, ableism, and bias, their historical roots, and their contemporary manifestations in schools and impacts on student experiences and outcomes.

- Implementing anti-bias/anti-racist, culturally affirming practices, policies, and school climates. In cases with restrictions on the ability to talk about or focus on such issues, leaders can support staff in understanding local data, identifying where inequities in opportunity or disparities in outcomes exist, reading and discussing the research base on historical and contemporary differences in opportunity, and employing research-informed strategies to mitigate the impacts of implicit bias.

- Establishing a leadership team that develops a school wide equity strategic plan, with bold and meaningful goals that aim to close inequities in opportunity and access to resources, and disparities in outcomes; ensuring that plan includes continuous data tracking to identify and address inequities and built-in accountability metrics to ensure progress.

4 Universal design built into each aspect of schooling

Too often, schools have a one-size-fits-all approach, with the same expectations and experiences for all children and with the "average student" in mind.[52] Consequently, some children — particularly those with disabilities, those who are neurodivergent, those who are gifted, those who are disabled and gifted, those who need different learning experiences, and those growing up bi/multilingually — are too often an afterthought. To fully meet the needs of students with diverse strengths and needs, school officials must design the school experience, such as the learning environment, physical space, instruction, assessment, and other programmatic features, with student variability in mind. Universal design (UD) is a particularly important concept for the inclusion of children with disabilities, though can benefit all students, as it allows the creation of both a physical and learning space that is maximally accessible to students with varying abilities, needs, and strengths, and where obstacles are reduced or eliminated. This is especially true for children who have been historically marginalized. When implemented using an antiracist lens, UD creates optimal experiences for every child by addressing barriers that impede learning opportunities and promoting spaces that are also culturally relevant, responsive, and sustaining.[53] Universal design should be embedded in each component of the school, including the physical environment, instruction and assessment, nutrition and meals, family and community engagement, and more.

☑ Physical environment.

A universally accessible physical environment considers physical accessibility (e.g., playgrounds that are wheelchair accessible and sinks that are low to ensure children of all heights can wash their hands), sensory needs (e.g., areas in the classroom that are quiet; access to sensory materials, such as fidget toys, trampolines, swings, etc.), and communication needs (e.g., having a visual communication board on the playground, in the cafeteria, in the classroom, etc.) across every aspect of the physical environment and across campus (e.g. playground, classroom, front office, cafeteria).

☑ Learning environment.

A universally accessible learning environment promotes multiple means of engagement (e.g., offering choices and allowing for agency), representation (e.g., presenting information in different ways, including text, videos, articles, graphic organizers, etc.), and action and expression (e.g., providing children with different modalities to express their knowledge, including communication devices, typing, making videos, using visuals, etc.).

☑ Nutrition.

Universally accessible food options ensure that school breakfast and lunch options meet a variety of dietary needs and — to the extent possible — are culturally familiar to students. Nourishing children also requires allowing children to eat and drink when their bodies tell them they need to. In practice, this looks like ensuring healthy snacks and water are accessible to students when they want and need them throughout the day, in the classroom and across campus (e.g. playground).

☑ Family partnerships.

Establishing authentic relationships with each individual family must include communicating in families' home languages, offering multiple forms of engagement and partnership, and ensuring flexible times for engaging that consider diverse work schedules and other family demands. Supporting families of children with disabilities includes ensuring they know their rights, have a voice and decision making role in IEP meetings, and are included in establishing plans and practices with school leaders and teachers. This may be particularly important for families of color who have been historically marginalized and have children with disabilities, as data has shown an array of inequities in IDEA systems for these children[54] — ranging from identification, to classification, to quality and settings of services.

☑ Community engagement.

Informed by authentic family partnerships, establishing partnerships with community-based organizations must be intentional and support the needs of the families and children in the school body. These could include partnerships with local colleges or universities, work support programs, food and housing assistance programs, immigration assistance services, and health clinics.

DOS PUENTES ELEMENTARY

New York, New York

Dos Puentes Elementary, a public dual language elementary school, implements an universal design for instruction to ensure that children with disabilities who are emergent bilinguals receive dual language instruction alongside their peers who are not disabled. Dos Puentes uses an integrated co-teaching model where both teachers have bilingual training, but one teacher has a general education background and the other a special education background. These teachers collaborate and plan together to make sure they are implementing universal design for instruction principles. For example, a group of co-teachers shared that they begin their day by showing students a visual schedule that breaks down what they are going to do for the day. The visual schedule is color-coded to show when instruction is happening in English versus Spanish. Pictures of teachers are used so the students know who they will be working with for each part of their day. Teachers also shared that when they noticed that some students' reduced attention and working memory were impacting their writing, they had them audio-record their ideas on a tablet. Then, the students were encouraged to listen to their recordings to write their ideas down on paper. This modification resulted in students writing longer texts. The teachers noted that this modification led a student to say, *"!Mira todo lo que escribí! !Lo hice solo!"* ["Look at all I wrote! I did it on my own!"]. These teachers also explained that they co-plan literacy lessons so that the same information is presented in different modalities, including text, audio, pictures, etc. They also develop highly engaging activities in which children have the opportunity to learn the material and show what they know in small groups and individually. Teachers shared that to successfully co-teach and implement an universal design for instruction, they need dedicated planning time and space to develop mutual trust and plan together. It should be noted that each grade has at least one classroom in which 40% of the children have a disability and 60% do not, resulting in a much higher proportion of children with disabilities in these classrooms than natural proportions[55] (i.e., the percentage of people with disabilities that naturally exist in the community). As schools continue to work toward full inclusion of children with disabilities in natural proportions reflective of the local community, it is important to implement research-informed instructional practices that facilitate inclusion, academic and social growth, and bilingualism and biliteracy for multilingual children with disabilities, while also establishing policies — such as child classroom placement, staffing structure, and co-teaching decisions — that move us closer to full inclusion.

Core Indicators

- Embeds universal design in all aspects of the school.

- Designs instruction to engage students in ways that align with their interests and strengths and support their individualized needs. The same content is presented in different modalities (e.g., visuals, videos, reading, etc.), and students are given different options on how they express themselves (e.g., verbally, visuals, or writing).

- Delivers assessments using different modalities and approaches, and students are given choices on how they want to demonstrate their knowledge (e.g., writing a paragraph, doing an oral presentation, or creating a video). These choices are not to exclude children from demonstrating their knowledge of a particular skill (e.g., writing); rather, the idea is that within one assessment, children have options regarding *how* to demonstrate their knowledge.

- Ensures all physical spaces — both indoors and outdoors — are accessible to all children and adults in the school community, including those who have physical disabilities, those who use wheelchairs or other assistive mobility devices, people of varying heights and sizes, people with different sensory needs, etc.

- Provides healthy snacks and clean water for children to access when they are hungry or thirsty, outside of the regular lunch period, across campus.

- Provides healthy meals in school in line with federal dietary guidelines; ensures that options for children with dietary restrictions and children who may need support feeding themselves are available, including food packaging that students can open, regardless of ability.

- Engages community partnerships that can support families' and staff's unique needs, such as quality healthcare, mental health support, food assistance, job training, higher education support, etc.

⑤ Blended pedagogies that align with the science of child development and are culturally sustaining

A robust body of neuroscience and developmental science spanning decades indicate that children's early years, including the elementary school years, are a critical period of development that set the foundation and trajectory for positive learning, social, and health outcomes in the long term.[56] High-quality elementary experiences require schools to intentionally blend pedagogies that align with development, support children's needs, optimize their strengths, and nurture their well-being. The intentional preparation of the learning environment to align with development, inquiry, and children's experiences — and the ways in which educators use the environment to support learning and growth — play an essential role in positively (or negatively) impacting children's academic and social outcomes.[57] Ensuring that every dimension of the school day is centered around children's development and need for active engagement is critical for child well-being and optimal learning.[58] Instruction (e.g., direct, individual, small group, large group), curriculum, and assessment; behavioral expectations and classroom and school rules; and school policies — including length of the school day and school day schedules and routines (e.g., frequency and duration of recess, homework, and drop-off and pickup procedures) — should all be sensitive to and differentiated based on children's development, interests, and individual needs. In particular, across these policies and practices, it is important to consider:

☑ Relationships are foundational.

Children learn best within the context of positive, trusting, responsive relationships with their teachers and with other children. This is especially critical for children in the early grades, who are making substantial transitional leaps in context and development and rely on relationships for smooth transitions, feelings of safety, confidence to participate in learning, and trust to freely explore and learn.[59] Importantly, the teacher-child relationship can be influenced by — or have an influence on — bias and inequities children face. For example, researchers have found that Black children have less close relationships with their teachers;[60] however, research has also found that a strong teacher-child relationship can buffer children from the impacts of racism and other systemic challenges.[61]

FERNDALE SCHOOL DISTRICT

Ferndale, Washington

In Ferndale School District, Superintendent Kristi Dominguez has prioritized play-based learning in Kindergarten. All Kindergarten teachers must include an hour of guided play during the day, not relegated to the end of the day. District leadership calls it an hour for uninterrupted "work time," acknowledging that young children's work is play. During the uninterrupted hour, children choose from a teacher-curated list of activities that typically include dramatic play, art, blocks and other building toys, sensory tables, and games. Sometimes, teachers also set up activities that connect with something the children are learning about. In one classroom, the teacher put items in the art area for children to create animals that would live in the savanna, an interdisciplinary lesson combining social studies, science, and literacy. In another classroom, the children turned their dramatic play area into a hair salon, using art materials to design the tools they would need to open up shop. This important "work time" period is a time of guided play and choice for kindergartners, with teachers moving around the room, engaging children in conversation about their work, probing for deeper thinking, and interjecting vocabulary. The Ferndale district is also working to extend this practice into first-grade classrooms.

> **Children's emergent capacities grow over time, especially the need for movement, rest, ability to engage on a single task, memory, and emotion and behavior regulation.**

MEXICAYOTL

Nogales, Arizona

Mexicayotl is a K–8 dual language school in Nogales, a border town in southern Arizona. They have a strong focus on culture and language, high academic standards, global sustainability, and social justice- starting in their communities. Nearly the entire school population is of Mexican origin and bilingual or Spanish-dominant. From the moment children enter the school building, they are immersed in art and symbols of Indigenous peoples of what is now Mexico. Across subject areas, their curriculum embeds children's cultures and a strong understanding of their ancestors and their contributions to the world. For example, in math, they learn about how their ancestors built complex pyramid systems, sharing with students: *"Math is in your blood."* For PE, students have Folklorico dance. Students learn to read and write in English and Spanish. Science lessons are often project-based, focused on sustainability and caring for the Earth. Students critically examine policies that disproportionately affect their community, including immigration policies, as they are situated on the international border. In one recent project, students established pen pal relationships with students in a northern border town between the state of Washington and Canada. They critically discussed how the two borders were different, why, and how they can be agents for positive social change.

Children's emergent capacities grow over time, especially the need for movement, rest, ability to engage on a single task, memory, and emotion and behavior regulation.[62]

The length of the school day, the structure of the school day, the frequency and length of recess, classroom rules restricting or dictating movement (e.g., requirements to sit at a table for extended periods of time), and schoolwide rules (e.g., requirements to walk, talk, or engage in rigid ways) all impact children's ability and motivation to engage in learning. When schools' expectations are misaligned with children's development and needs, many children may not meet those expectations, potentially resulting in externalizing or internalizing behaviors, harsh discipline, and school disengagement.[63] Ensuring movement is a part of learning is also critical and may be especially important for children with more active temperaments and boys.[64] It may also be especially important for children of color who, research suggests, receive more scrutiny and less benefit of the doubt in their behavior.[65] Both gross and fine motor movement and development make learning connections in the brain. Indeed, research finds an association between physical engagement, brain development, and learning.[66]

Unstructured play and structured guided play are key.

Play is an essential part of young children's learning process.[67] Play-based learning — ranging from child-directed play to teacher-guided play — supports children's learning and development in a way that follows their interests, and encourages exploration and problem-solving.[68] A recent meta analysis of 39 studies found that guided play was associated with greater early math skills, shape knowledge, and task shifting than direct instruction, and with greater spatial vocabulary than free play.[69] Indeed, findings across studies show that play can support development and academic skills across domains — including social, emotional, language, and math, as well as the "how" of learning, fueling curiosity, inquiry, problem-solving, attention, working memory, and emotion regulation.[70]

Inquiry and exploration fuel critical thinking and creativity.

Inquiry-based learning is an instructional approach in which children are active participants in their learning. When children ask questions, the teacher provides experiences for children that allow them to make observations and draw their own conclusions instead of giving them the answers directly.[71] The goal of inquiry-based learning is for teachers to activate children's curiosity about the world around them and model the thinking process instead of telling them what to think.[72] Research on inquiry-based learning has shown that elementary-aged students have higher scientific conceptual understanding,[73] greater engagement,[74] increased growth in their math skills,[75] and better critical thinking skills.[76] Research also shows that English learners in grades K–6 who received instruction via inquiry-based learning had higher math, science, reading, and writing skills than those who received traditional instruction; however, these students' growth was related to the number of years they participated in inquiry-based learning.[77]

☑ Learning happens inside and outside the walls of the classroom.

Outdoor learning can have both health and educational benefits.[78] Outdoor learning is not just appropriate for science lessons; indeed, outdoor settings can facilitate learning in reading, writing, math, and other content areas as well as provide opportunities for social and emotional development, problem-solving, and environmental education. The outdoors can help stimulate children's thinking and creativity. Research shows that children in grades K–12 who have outdoor learning opportunities have more positive attitudes toward school, better self-esteem, higher achievement, and a greater sense of responsibility.[79] Unfortunately, access to outdoor learning opportunities are not equitably or equally afforded to all students. A recent survey found that of 121 outdoor preschools, only 3%, 7%, and 1% of children enrolled were Black, Latine(o/a), and Native American, respectively.[80] A recent report outlines several factors that may contribute to these trends, including a the private nature and costliness of many nature-based learning programs; education policies that focus narrowly on traditional approaches to learning in an indoor classroom, at desks or tables, using text books or worksheets; and inequitable urban planning that has resulted in less green space, access to nature, and outdoor play spaces for children in low-income communities.[81] Finally, learning happens outside school campuses every day — and long before and long after the first and last days of school. Pedagogy should be deeply connected to culture and in partnership with families.

☑ Promoting children's agency and leaning into their interests optimize children's strengths and accelerate learning.

Research has found that child-led learning and embedding children's interests and experiences in their learning can have positive impacts on academic outcomes. One notable child-directed pedagogical approach is the Montessori model, a child-directed approach that situates the teacher as guide and the student as leading and being responsible for their own learning. This approach generally involves mixed-aged classrooms, project-based learning, and independent child-led learning over two- to three-hour uninterrupted work cycles throughout the day. Studies show that Montessori programs have positively impacted children's academic growth, executive functioning, and social skills, and they have also bridged disparities in outcomes between children from higher- and lower-income households.[82] One study found that adults who attended a Montessori school for at least two years in

BALDWIN HILLS
ELEMENTARY SCHOOL
Los Angeles, California

One example of culturally sustaining pedagogy is African-centered pedagogies,[90] which center the cultural, historical, and life experiences of individuals of African descent into every aspect of children's learning experiences. The roots of African-centered pedagogies can be traced to the 1700s, when individuals of African descent developed schools to meet the needs of Black children and families.[91] One of the primary goals of African-centered pedagogies is to provide Black children with a deep understanding of themselves through knowledge of their rich African and African American history and their ancestors.[92] Baldwin Hills Elementary School, a public school in the Los Angeles Unified School District, infuses African-centered pedagogies throughout the school that values community, culture, music, inquiry-based projects, and virtue education. The school's mascot is the Sankofa bird, which represents the idea that students of African descent must remember their history and use that history to move forward — or, as stated simply in their school's motto, students must be "anchored and grounded in strengths from our past, poised and ready to soar."[93] It is not uncommon for students, including their youngest students in transitional Kindergarten (TK), to engage in critical discussions about Black skin and melanin or to use hip hop as a way to explore figurative language. Fourth grade students read *Malcolm X: By Any Means Necessary* by Walter Dean Myers as a standard part of the curriculum, which should not be attributed to a state or district decision but a school one. In 2020, Baldwin Hills was recognized as a California Distinguished School, an award bestowed by the California Department of Education to schools "demonstrating significant gains in narrowing the achievement gap."[94]

their childhood had higher measures of well-being, social engagement, and self-confidence as compared to those that did not; more years of attendance in Montessori correlated with higher well-being scores.[83] Another study found that

Black students in lower elementary school Montessori programs scored significantly higher in reading scores at the end of third grade, though differences were not noted in math.[84]

☑ **Project-based learning (PBL) meaningfully connected to children's experiences and communities can fuel engagement and equip children to be positive agents of change.**

Project-based learning (PBL) is an approach in which children develop knowledge by working on a project during an extended period of time to explore and respond to real-life, complex questions or problems.[85] PBL can nurture peer relationships, collaborative problem-solving, and higher-order thinking.[86] PBL is most effective and engaging when it is relevant to children's experiences and communities. Indeed, PBL has the potential to ensure hands-on learning experiences that nurture children's curiosity, promote positive self identities, grow and apply critical thinking skills to social injustices, and become positive agents for change in their community and world. This approach can extend learning beyond the walls of the classroom and beyond the pages of a textbook to critically analyze challenges in their communities and world and work collaboratively to formulate creative solutions.

☑ **Culturally sustaining pedagogies that affirm children's intersectional identities are essential.[87]**

Culturally sustaining pedagogies embrace children's cultural, racial, and linguistic identities and embed children's lived experiences in learning, recognizing this is essential to promoting child well-being and academic outcomes.[88] This focus on lived experiences is particularly important for children who are Black, Latine(o/a), Indigenous and other children of color, in addition to others from historically marginalized groups (such as those who are disabled) whose contributions to American society have been excluded, in many cases, from general curricula. Schools that apply culturally sustaining pedagogies align their mission, policies, pedagogy and instruction, professional development, and assessment practices with ideologies and practices that sustain children's identities.[89] In action, the utilization of culturally sustaining practices looks like teaching children accurate history in developmentally appropriate ways, explicitly discussing the strengths and contributions of their ancestors and communities, situating lessons in current events, and embedding children's cultures and histories into lessons.

Culturally sustaining practices can be extended by including other identities, including language and disability status. For example, children can learn about how people with disabilities worked to make sure that all public buildings have ramps so everyone — including people with wheelchairs — can enter them. This effort made buildings more accessible for everyone, such as people who are injured and have to temporarily use crutches or parents with strollers.

Core Indicators

- Aligning all learning content and processes with developmentally appropriate practice.

- Prioritizing relationship building between students, teachers, peers, and parents early in the school year and throughout through practices like dedicated 1:1 time for every students and every family (e.g., meet the teacher day with individual time slots for families; 1:1 conversations with parents early in the year to discuss child strengths and needs), home surveys that inquire about children's interests and parents' perspectives, peer/classroom community outings, individualized and small group instruction for each child daily or weekly, and daily classroom community discussions that focus on authentically getting to know each child's interests and strengths.

- Planning and implementing active learning opportunities, such that children are continuously presented with experiences in which they learn by doing, moving, thinking, and exploring — as opposed to passive learning activities, where children simply take in information from teachers or books.

- Identifying children's strengths and interests through documentation and assessment and providing materials and activities that build on those strengths and interests.

- Embedding child-centered learning across subject areas via approaches like intentional play-based learning, inquiry-based learning, and project-based learning.

- Nurturing child agency and promoting self management (e.g., children can use the restroom freely and take care of their needs without unnecessary restrictions; children can access snacks when they are hungry; children can decide the order in which they complete tasks in the classroom).

- Providing mentorship and professional development that focuses on building educator capacity on child development and learning science, relationship building, culturally sustaining pedagogies, ongoing assessment

and documentation to individualize learning, and intentional play-based learning across all academic subject areas and developmental domains.

- Following the principles of culturally sustaining pedagogy where children's identities are affirmed, accurate history is critically analyzed, and children are given the tools to be positive agents for change.

- Implementing communal and peer learning and intentionally building cross cultural friendships between peers across diverse social identities.

- Embedding authentic opportunities for children to learn concepts through lessons, materials, and discussions that are relevant to their lived experiences and communities and to learn from those of others.

IDEAL LEARNING PRINCIPLES

The "Principles of Ideal Learning Environments" developed by the Trust for Learning (2020)[95] outline key concepts to help educators, school administrators, and district and state leaders create optimal learning environments for children birth through age eight across a variety of settings. The Principles weave the science of child development with diverse philosophical and pedagogical approaches to teaching and learning.

- **Decision-making reflects a commitment to equity** in which every child is celebrated for their unique identity, each child has access to individualized educational resources to thrive, and schools recognize and combat the disparities that children who experience exclusion and oppression face.

- **Children construct knowledge from diverse experiences to make meaning**, using their hands, minds, bodies, and hearts to observe, play, and participate across learning domains in environments that reflect their communities and cultures.

- **Play is an essential element,** and time, space, materials, and experiences are fostered both indoors and outdoors to stimulate children's cognitive, physical, social-emotional development.

- **Instruction is personalized to each child's development and abilities,** where educators tailor experiences to children's individual growth and trajectories, ensure inclusion for children with disabilities, and value and support children's home languages aligned with parent's goals for their child's development.

- **The teacher is a guide and co-constructor of knowledge,** viewing children as capable and competent learners, engaging in teacher research to refine and adjust their practices, and developing authentic relationships with families and communities.

- **Children learn through relationships,** and a sense of community, belonging, and trust are fostered.

- **The environment is intentionally designed** with attention to organization, enrichment, and access to natural materials that enhances children's exploration.

- **The time of childhood is valued** through unhurried, responsive daily learning experiences that are flexible yet consistent to allow for full engagement.

- **Continuous learning benefits adult development,** and schools share a coherent vision and philosophy for their work, take responsibility to be anti-racist and anti-bias, and participate in ongoing strengths-based coaching and professional development.

⑥ Research-informed, community relevant, individualized instruction and interdisciplinary curricula

☑ Individualized Instruction

Children grow and develop at varying paces, have diverse strengths and needs, and optimally learn in different ways and through different approaches. A one-size-fits-all approach is not and has never been effective, considering the rich diversity in children's learning preferences, paces, and contexts. Individualized or differentiated instruction recognizes individual child skills and growth and provides support where needed, to optimize and grow strengths, and support individual needs with precision. Children with disabilities who receive IDEA services have Individualized Education Plans (IEPs) where families, teachers, and other service providers come together to develop, implement, and track progress on a set of measurable and specific goals. Though the IEP system is not perfect, it does provide a model for individualized goal setting, instruction, tracking, and support. These basic tenets can and should be extended to all students, such that every child would have an individualized learning plan, co-developed by the teacher, family, and other relevant parties. In high-quality elementary schools, child-level data is used to determine which skills children already possess and which skills need additional support to acquire. Educators can partner with families and other relevant parties to create individualized learning plans with measurable goals and action steps. Informal and formal data are continuously gathered to determine children's progress and modify instruction as needed. Many higher resourced schools already engage in this type of individualization. This degree of targeted support and learning requires manageable class sizes, an issue that is further discussed in subsequent sections, and can and should be done individually and in small groups.

☑ Curricula

Curricula should be interdisciplinary, strength-based, and reflect the lived experiences and needs of each and every child, including those who have been historically excluded and marginalized from and in education systems.[96] High-quality curricula are holistic and address each content area; center student engagement and agency; have clear learning objectives, well-designed learning experiences, and embedded formative assessments that allow educators

GIFTED AND TALENTED EDUCATION

Gifted and talented education (GATE). Gifted and talented education (GATE) programs should also be considered in individualizing instruction and educational experiences, as such instruction can provide supplemental learning to students who have particular strengths in certain areas. It is important to note that GATE programs have historically been used to, or in practice have resulted in, resegregating school buildings. Federal data indicate that Black and Latine(o/a) students make up 43% of student enrollment but 27% of enrollment in GATE programs.[123] Research finds that White children are twice as likely as Black children to be in GATE, even when they share the same math and reading scores.[124] Moreover, Black students are more likely to be referred to GATE programs by Black teachers, compared to White teachers.[125] In addition, students in Title I schools are identified for GATE at a rate of 58% of their peers in non-Title I schools.[126] Inequities in GATE access have not changed in decades.[127] It is critical for school leaders to examine their definitions of gifted and talented, their screening and identification procedures, referral processes, and family partnerships to address the well-documented inequities in access to GATE.

to adjust their instruction based on students' needs and development. They also have a scope and sequence that can be adapted to children's learning trajectories, while also embedding research-supported teaching practices. These curricula are also supported by research, showing that its implementation is effective in promoting students' positive academic and social outcomes. Existing curricula can be adapted to reflect the needs and lived experiences of the students the school serves, if no such curricula exists, and offer students opportunities to connect what they learn in

the curricula with in-depth learning on topics that allow for critical thinking, problem-solving, and character development. Administrators and education staff should have an established process for adapting the curricula, implementing the curricula with high fidelity, and aligning the curricula with learning standards.[97]

☑ Research-informed subject area instruction.

Subject-specific instruction should be aligned and intentional, with opportunities for children to embed the learning of various subjects within one lesson or activity, when relevant. However, within these integrated lessons and activities, there should be careful attention to embedding research-supported strategies for providing instruction across each subject area. There also should be opportunities for children to learn a language they do not speak at home, with opportunities for experiential learning where children engage in conversations to practice their new language. We provide an overview of these research-supported instructional strategies below:

READING/LANGUAGE ARTS

There is a strong body of research supporting that the reading and language arts instruction should be informed by the science of reading (SOR). SOR refers to the evidence that we have about how children acquire reading, which has been informed by multidisciplinary research conducted over the last 50 years in multiple languages across the globe.[98] The SOR supports that children need word recognition (e.g., phonics, phonological/phonemic awareness; sight word recognition) and comprehension (e.g., vocabulary, background knowledge; print concepts; word and sentence awareness; inferencing; genre recognition) to become fluent readers who understand what they read. Word recognition instruction should target phonological (awareness of syllables in words) and phonemic awareness (awareness of individual sounds in words), explicit and systematic instruction to read and spell, and connected practice to build children's automatic and fluent decoding. Effective comprehension-building strategies include engaging children in read aloud of various text genres (e.g., narratives; expository), rich back-and-forth discussions with teachers and adults, exposure to vocabulary and analysis of word parts (e.g., suffixes/affixes), experiences that build on children's background knowledge, and explicit grammar instruction. Children should also receive instruction to build their writing skills and to connect their writing to reading. Additionally, the texts that children read should include topics and authors relevant to their cultures and identities, with explicit opportunities for bilingual/bi-dilectal children to

bridge what they know across languages/dialects.[99] Children who are emergent bilinguals/English Learners also benefit from reading instruction that is aligned with the SOR, with added opportunities to make cross-linguistic connections, explicit instruction to learn to read in English and their home language (i.e., become biliterate), comprehensive language learning supports embedded across all parts of the reading instruction, authentic use of texts that are culturally relevant, and intentional instruction to advance their oral language skills and listening comprehension.[100]

Reading instruction informed by balanced literacy approaches e.g., whole language approach; Fountas & Pinnell), which aligns instruction to the theory that skilled reading involves making meaning of texts using three cues-semantic (e.g., word meaning and sentence contexts); syntactic (e.g., grammatical features); and graphophonic (e.g., letters and sounds).[101] Whereas word meanings, grammar, and letter-sound knowledge are important components of reading, a limitation of the balanced literacy approaches is that there is an assumption children decode by looking at words as a whole without analyzing its parts. This whole word analysis approach is incompatible with the SOR, which supports children needing explicit and systematic phonics instruction, combined with opportunities to build their listening comprehension, to read fluently and understand what they are reading. Finally, it is important to note that SOR must be coupled with other culturally sustaining practices (e.g., assessments that capture language variety, acknowledgment of oral traditions, non-spoken reading acquisition, etc.).

MATH

The teaching of mathematics has been a contentious national debate for decades, particularly in the early grades. If students are below grade level by the time they enter first grade, research shows that they are unlikely to catch up.[102] The pressure to ensure students are at or above grade level — coupled with lack of time, new standards and high-stakes testing — has divided math scholars regarding effective math teaching practices. However, most math scholars agree on at least three things: students need opportunities to develop concepts and skills; students need opportunities to develop in their abilities to engage with mathematical concepts and ideas; and students need to engage in critical thinking.[103] All children should be supported from the beginning in developing their innate capacity to learn math, just as they should be helped to develop their innate capacity to learn language. Considering this, it is important for a scope and sequence to build on what children already know and their curiosity to help them develop the concepts (e.g., counting, patterns, etc.) that give meaning to the math children are

learning about and interacting with already. It is also important to embed culturally sustaining approaches, such as learning about the contributions of communities from diverse racial, gender, culture, and ability backgrounds. For math instruction to be effective, educators must assume the competence of all children regardless of race, culture, gender, ability, help children use math to become positive agents of change by using problem solving to learn about and support their communities. Math instruction in the early grades should also include activities such as counting collections and choral counting to provide opportunities to understand and extend student thinking. These activities are essential to honor and support the development of students' mathematical and language skills. In addition, these instructional activities provide spaces for students to develop confidence and build a positive math identity.[104] To support teachers, it is recommended that school leaders consider hiring math specialists in addition to providing ongoing mathematics instruction professional development to teachers.[105]

SCIENCE

While children are scientists from birth, exploring their curiosities about the world around them, science instruction is not prioritized in the early elementary grades. There is significantly less time spent on science and there are rarely opportunities for engineering learning opportunities. According to the 2018 National Survey of Science and Mathematics Education, teachers in the early grades provide their students with science learning opportunities on average about 18 minutes per day.[106] Further in typical elementary schools, science is an under-resourced area and science teaching strategies and standards lack alignment, coherence, and equitable opportunities from preschool through the end of elementary school. In 2012, the National Academies of Sciences, Engineering, and Medicine released the Framework for K–12 Science Education, which the Next Generation Science Standards were based on. New science and engineering expectations for the elementary grades include opportunities for children to "make sense of phenomena and design solutions through exploration, reflection, and discussion, in a process that involves the interaction of three dimensions: scientific and engineering practices, crosscutting concepts, and disciplinary core ideas."[107]

SOCIAL STUDIES

The purpose of social studies in elementary schools should be to provide students with learning experiences that are developmentally appropriate, historically accurate, relevant, and reflective of their communities and the social and global realities of the world (commonly referred to as windows and mirrors). Unfortunately, the teaching of social studies has frequently been neglected in elementary schools due to an emphasis on literacy. In fact, elementary school teachers are often on their own when it comes to developing and implementing social studies lessons.[108] A recent analysis concluded that elementary teachers spend less instructional time on social studies than other core subjects and receive considerably less professional development on social studies compared to other content areas.[109] Moreover, more often than not, when some social studies topics (such as slavery and Thanksgiving) are taught, they are taught through myths to avoid teaching about the painful and difficult moments that have shaped society today. Recent book bans and backlash about these histories have only compounded the challenges of teaching social studies in elementary schools and have left more questions than answers about what is developmentally appropriate to teach in the early grades. Despite these attempts to cause confusion, research suggests that children as young as three years old are able to evaluate the credibility of sources to determine if information is reliable.[110] Extensive examples exist on how to teach about painful moments in history in developmentally appropriate and progressively complex ways over the course of elementary school. The Shoah Foundation at the University of Southern California offers professional development, lesson plans and other resources to elementary school teachers on how to teach young children about the Holocaust and genocide. Little Justice Leaders, a subscription box service, provides lesson plans and art-based activities for teachers and parents to teach children, between the ages of four and 12 years old, about topics such as Black history, Indigenous history, and Jewish history. For more than 40 years, Facing History and Ourselves has offered teaching resources and professional development to social studies and language arts teachers to support teaching accurate history, which has been shown to improve academic achievement, social-emotional learning, civic engagement, and classroom culture.[111] Considering this, quality elementary schools must be willing to teach accurate content in developmentally appropriate ways, nurture critical thinking skills, and equip students with the knowledge and skills to become active and engaged participants in a democratic society.

THE ARTS

At children's earliest, most impressionable stages, the arts are used to teach them across an array of subjects (e.g., lyrics and melodies to teach children the alphabet in early literacy, state capitals in social studies, and the order of operations in math). Indeed, the arts in the early grades are essential to a child's development, particularly in the areas of social emotional development, fine motor skills, creativity, and overall achievement.[112] Studies have shown significant

gains in test scores in science and writing for middle school students from households with lower socioeconomic status who regularly had access to the arts in elementary school, as compared to students who did not.[113] The most recent data from the National Center for Education Statistics show that while every state has developed standards for arts education in K–12 schools, only 44 states require districts to provide arts education in elementary schools.[114] There are also inequities in access to arts education that break along racial lines. The American Academy of Arts and Sciences documented that, while White students have experienced little decline in arts education over the past forty years, African American and Latine(o/a) students have experienced reductions of 49 and 40 percent, respectively.[115] As schools and districts seek to integrate the arts into their curriculum, they could consider the resources made available by the Arts Education Partnership, a network of more than 200 organizations advancing arts education, supported by the National Endowment for the Arts and the U.S. Department of Education.[116] The Partnership provides resources for educators and school leaders on arts education, including how best to center student voice. Art instruction should also include the contributions, styles, and expressions of Black, Indigenous, other people of color, and people with disabilities. Children should be exposed to the arts every day in the classroom through interdisciplinary work (e.g. drawing a picture about the sentence they are writing; using music and dance to practice math facts) and multiple times a week in dedicated specialized classes, like drama and music, where they can go deeper in learning various techniques, forms of expression, and approaches across various forms of music, drama, dance, and art.

PHYSICAL EDUCATION

Physical education (PE) is important for improving both physical and mental health in children while building social and motor skills. When done right, PE can help students develop lifelong healthy habits when it comes to physical activity and proper nutrition. Evidence suggests that increased time spent in PE can actually lead to improved grades and help students stay focused once back in the classroom.[117] With recent data revealing that obesity rates among children rose significantly during the COVID-19 pandemic, it is more important than ever that children learn about the role of physical activity and proper nutrition in maintaining a healthy lifestyle.[118] A high-quality physical education class is led by knowledgeable, energetic educators who are continually working toward the various standards set forth in a sequenced curriculum. Many states and districts use SHAPE America's National Physical Education Standards to develop or revise their specific standards, with emphasis placed on developing motor skills, learning key fitness and movement concepts,

developing social skills through movement, and discovering which physical activities are personally meaningful.[119] Children should have access to PE daily — particularly in elementary school, when movement is so critical to learning and when health habits begin to form.

WORLD LANGUAGE(S)

Including a language a student does not speak at home as a subject can build students' capacity to communicate with more people, become global citizens of the world, and learn about cultures that are different from their own.[120] Too often, school districts begin offering world language options in middle or high school, which is not aligned with the science of brain development and language learning. Ideally, students should receive ongoing world language instruction from grades K–12 to continue building on their skills and should be given opportunities to practice their new language in conversation by practicing with their teachers and peers and by having experiential learning opportunities where they are immersed in the language and culture.[121] Effective strategies for teaching a new language include early and high-quality exposure, starting in early education and Kindergarten and progressing consistently throughout elementary school; providing students ample opportunities to build their listening, speaking, reading, and writing skills in the new language; and embedding the new language across content areas like math, science, social studies, etc.[122] World languages can live alongside and be integrated into dual language education models (e.g., Spanish-English DLI program that also teaches French as a world language). ELs and emergent bilingual children should have access to learning new languages other than English and their home language as well, alongside their monolingual English speaking peers, and should not be excluded from these learning opportunities.

> A one-size-fits-all approach is not and has never been effective, considering the rich diversity in children's learning preferences, paces, and contexts.

Core Indicators

- Designing and applying individualized learning plans for each child with tailored supports to optimize strengths and address unique needs.

- Combining a variety of small group and individual instruction in the early grades, informed by research on best practices.

- Combining explicit instruction where research suggests it is most effective, such as phonics, and less structured instruction in other areas such as oral language, vocabulary, comprehension, etc.

- Using curricula that addresses all domains of development and subject areas; embeds children's culture, language, and other identities; includes formative assessments; has a comprehensive scope and sequence; and guides instructors on using hands-on learning. Adapting existing curricula if not all of these facets exist in existing curricula.

- Integrating subjects integrated within lessons and activities, while also embedding research-supported instructional strategies and allocating instructional time. Subject-specific research-supported strategies include the science of reading, embedding critical thinking in mathematics instruction, opportunities for hands-on exploration in science, social studies that teaches true history, art instruction that is embedded in daily routines and representatives of various cultural groups, physical education that is engaging and accessible to all students, and language-learning supports and conversational opportunities for world language.

- If provided, ensuring homework is developmentally appropriate, differentiated, and purposeful, avoiding "busy work" worksheets and prioritizing parent-child interactions, reading together, physical activity and play, and math or science activities embedded in the home or community (e.g., going for a walk and finding bugs and examining their differences and similarities; looking at the moon and drawing or writing about its phase; practicing number identification and counting by drawing out and playing hopscotch with sidewalk chalk).

ENCOMPASS ACADEMY

Oakland, California

Excerpted from Deeper Learning in Kindergarten by Laura Bornfreund, New America[128]

In the 2023–24 school year, a group of schools serving urban communities was selected to implement the Great First Eight Kindergarten curriculum, followed by the first and second grades in subsequent years. Great First Eight is a full-day, whole-child, open educational resource (OER) curriculum designed for children from birth to age eight and for classrooms with a number of children from historically underrepresented racial and ethnic backgrounds. Great First Eight aligns with research and standards, emphasizing play, curiosity, and research-tested approaches to knowledge- and skill-building. Uniquely, it prioritizes children's natural wonder and aims to empower them for a more just and caring society. It is also a living curriculum, allowing for real-time updates and narrowing the lag between research and curricula. Great First Eight facilitates vertical alignment with its birth-to-age-eight approach and horizontal alignment with assessments, professional learning, family engagement, and other areas all aligned to the curriculum's units.[129]

EnCompass Academy in Oakland, California was one of them. EnCompass Academy prioritizes high academic achievement and the holistic development of each child. The school's mission is to create a safe and joyful environment that equips students to become lifelong learners and leaders. Great First Eight and Encompass priorities and values are well aligned, and the curriculum is a great fit so far. In the Great First Eight curriculum, children participate actively in project-based learning much of the day, which can look and feel like learning through play. For example, students observe collisions in the "Domino Effects" unit as they investigate ramp height. They investigate what happens when they construct and then let a ball roll down a steep or shallow ramp. After the activities and labs throughout the day, children have opportunities to share and reflect on what they are learning. Two Kindergarten teachers at EnCompass are using the curriculum and find that their students love the experiential learning activities; they feel included, secure, and joyful.

7 Dual language education to promote bilingualism, biliteracy, biculturalism, and positive self-identity and to meet the needs of English learners

All children should have full and equal access to educational opportunities. For children who speak languages other than or in addition to English at home, this requires dual language education that builds on their home language and nurtures their emergent bilingualism.[130] In dual language programs, children receive instruction in English and a partner language (ideally, students' home language/s) with the goal of developing bilingualism, biliteracy, biculturalism, and positive self-identities. Fostering children's pride in their bilingual identities, building understanding of the history of languages in the United States, and applying critical thinking skills to the perceptions of non-English languages in society today can build children's sense of agency and reinforce multilingualism as an asset.

Bilingualism and bilingual education are the norm in numerous countries around the world, including Canada, India, Paraguay, New Zealand, and Ireland.[131] In the United States, however, a country without an official language and in which more than 350 languages are spoken, English-only education has been and continues to be the status quo. Though there is only one remaining state with an explicit English-only law on the books, recent data suggests that only 8% of children categorized as English learners (ELs) are enrolled in dual language education; that number rises to about 17% if all forms of bilingual education are included, leaving 83% of ELs in English-dominant models.[132]

The body of research on the benefits of bilingualism is expansive — impacting early cognitive development, along with academic, social, economic, and health outcomes.[133] Studies show that emergent bilingual children who receive a dual language elementary education outperform those who receive English-only instruction in reading and math, in addition to learning English faster.[134] In younger children, research has found that children in dual language programs have higher oral language fluency than their bilingual peers who received primarily English instruction with some home language support.[135] Research also has found that Spanish-speaking Latine(o/a) students in particular who maintain their bilingualism are more likely to attend a four-year college,

which eliminates the need to transfer colleges and may increase the likelihood of degree attainment.[136] Research on English-only programs, which prioritize English language acquisition over the development of a child's home language, may cause harm to students' academic potential. A decade-long study examining the impacts of Arizona's English-only law in schools, Proposition 203, found that only 15% of students classified as English Learners (ELs) were determined to be English proficient after one year.[137] Researchers found some gains in third grade, but they noted dramatically lower outcomes in the fifth, eighth, and tenth grades. Indeed, gaps in eighth graders' math performance between ELs and non-ELs increased dramatically once the law was implemented. In 2002, EL's and non-EL's math performance in eighth grade differed by 10%; by 2014, the gap had grown to 40%.

☑ Access

Despite this research base, over 90% of emergent bilingual K–12 students in the U.S. lack access to dual language learning.[138] Moreover, Black English-speaking children are under-represented in dual language schooling, and those with disabilities who are also emergent bilingual have even less access to general dual language education and special education services in their home language/s.[139,140] Because dual language education is not universally accessible to all children, it is critical to consider enrollment policies in dual language opportunities that prioritize emergent bilingual children with and without disabilities — across racial and ethnic groups and language backgrounds — as these children have the most to gain through access and the most to lose from lack of access. Administrators should also prioritize Indigenous children who speak heritage language/s and/or whose families and communities desire to participate in language revitalization and maintenance efforts. Finally, children from other marginalized groups who are English-dominant and have less access to these programs, including Black children and other children of color, children from lower incomes, and children with disabilities, should also be prioritized and afforded access to these programs.

SERVICES & INCLUSION FOR EMERGENT BILINGUAL CHILDREN WITH DISABILITIES

PROGRAMMATIC STRUCTURES

FAMILY LEADERSHIP & ENGAGEMENT

LANGUAGE ALLOCATION

FRAMEWORK FOR HIGH-QUALITY DUAL LANGUAGE IMMERSION: FROM THE EARLY YEARS TO THE EARLY GRADES

WORKFORCE EDUCATION, CREDENTIALS, & PROFESSIONAL DEVELOPMENT

CURRICULA, INSTRUCTION, & PEDAGOGY

ASSESSMENT

☑ Quality

The quality of dual language immersion is as critical as access; indeed, positive outcomes depend on the quality of implementations. Core dimensions of high quality dual language education were summarized in the recent publication from the Children's Equity Project, *Operationalizing High Quality Dual Language Education: From the Early Years to the Early Grades.*[141] These dimensions have a strong focus on language allocation, assessment, and instruction inside the classroom, and extend beyond these to address programmatic policies that include equitable enrollment, family partnerships, workforce competencies and development, inclusion and support for children with disabilities, and more. We highlight key classroom-level quality indicators below:

LANGUAGE ALLOCATION

In high-quality dual language programs, there is a clearly articulated language allocation plan, such as a 50/50 model, in which children receive part of their instruction in English and the other part in the partner language (e.g., Spanish). The languages of instruction alternate in the same day, week, or by subject. Co-teaching models, in which one teacher provides instruction in English and the other provides instruction in the partner language, are common, but one bilingual teacher can provide instruction in both languages as well. Within this 50/50 language allocation plan, there is intentional creation of times and spaces within the day in which teachers and children can use both languages at the same time; these times do not have to be long, but they must be intentional. This flexible language use is called translanguaging (see pages 33–36 of **this**

report for more details). This use of the two languages at the same time is intended to help children understand concepts, to clarify information or instructions, to help them process new information, to create more positive teacher-child relationships, and to foster a sense of pride in one's communication and language varieties.[142] The integration of translanguaging within traditional 50/50 language allocation models has been directly linked to positive identity formation, successful completion of academic tasks and higher classroom participation, enhanced reading skills, increased metalinguistic awareness (the ability to think about language), more complex discussions about books,[143] and expanded creativity.[144]

INSTRUCTION

Effective instructional strategies for dual language programs include embedding specific language-learning strategies across all subject areas (e.g., previewing vocabulary, using visuals/graphic organizers, peer conversations, etc.), and creating opportunities for children to explicitly learn about the similarities and differences across languages. For example, a teacher might talk about how the Spanish alphabet has the letters *ñ, ll, rr,* and *ch,* but English does not have these letters in its alphabet. Soto and colleagues (2020)[145] found that children who received a primarily Spanish early literacy intervention with explicit connections between Spanish and English, met the benchmarks on phonological awareness and alphabet knowledge measures in both languages.

> **All children should have full and equal access to educational opportunities. For children who speak languages other than or in addition to English at home, this requires dual language education that builds on their home language and nurtures their emergent bilingualism.**

DREAMERS ACADEMY

Sarasota, Florida

Dreamers Academy is a public charter dual language elementary school serving Kindergarten to fourth grade students. Almost half (41%) of the students enrolled speak primarily Spanish at home, and 52% receive free or reduced lunch. Although Dreamers has only been in operation for three years, in 2023, their fourth grade students outperformed their peers district- and state-wide in math. Dreamers has a 50/50 language allocation model, where children receive half of their instruction in Spanish and the other half in English. Teachers co-teach, with children having instruction in one language and with one teacher on one day and the other language and teacher on the following day. This language allocation model was developed to ensure that children receive all instruction, including specials like Music and Art, in both languages. The administrator helped design the school building to facilitate dual language education, such that classrooms that are co-taught for each grade have a door between them to facilitate collaboration. To ensure that the co-teachers are providing instruction in tandem, they are given time to co-plan and ensure alignment between their lessons. Children are taught in accordance with state-level standards and in alignment with a bilingual approach to education. The curricula used are Benchmark Advanced/Benchmark Adelante for Language Arts and Math Reveal for grades K–5. The administrators and teachers are in the process of adapting the Science and Social Studies curricula to fit within a dual language setting. Additionally, instruction embeds opportunities to make explicit connections across languages. For example, the Spanish instruction teacher has an anchor chart with cognates — words that sound the same in English and Spanish — to help children bridge the concepts they know across their two languages. Translanguaging is also used within the context of the traditional 50/50 language allocation model; for instance, a teacher who is providing instruction in English will clarify the content in Spanish to help the child understand before continuing the English instruction. Newcomer children who are not yet fluent in English are kept in the Spanish-only classroom for a month to help them get acquainted with the school's culture and procedures before switching between Spanish and English classrooms.

In addition to language allocation and instruction, high-quality dual language immersion programs use curricula and instructional materials that are reflective of children's experiences and identities including their linguistic identities and offer opportunities that enable children to explore and take pride in their bilingual identities; assess children in their two languages; and provide educators with ongoing professional development to support their implementation of the language allocation model, instructional strategies, and assessment practices. Ultimately, a dual language model by itself is insufficient to ensure a high-quality elementary experience. Similarly, embedding other core quality ingredients but leaving out dual language instruction is inadequate for emergent bilingual children. Dual language education must be a priority and must live alongside other dimensions of quality covered here, including (and especially) culturally sustaining pedagogy and unique attention to historically marginalized groups.

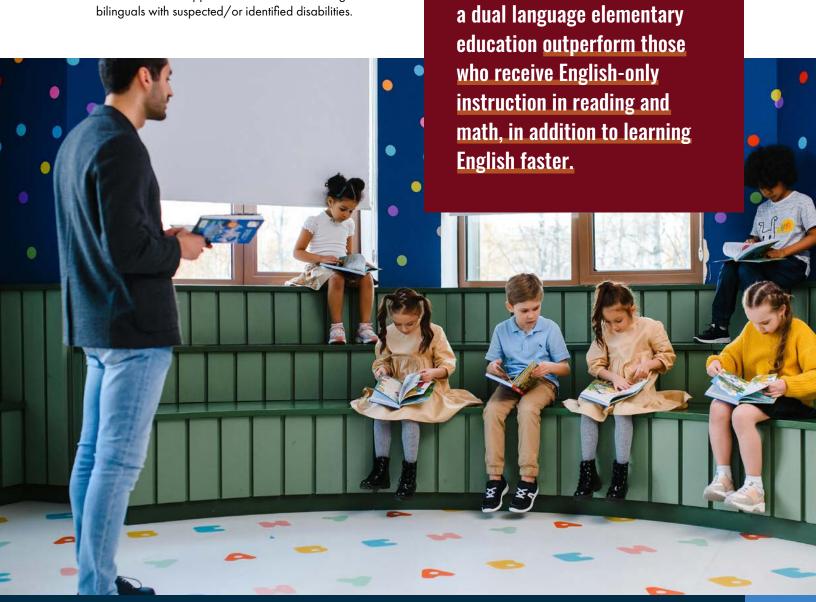## Core Indicators

Adapted from Soto-Boykin et al.[146]

- Programmatic structures with a leadership team with specific roles and responsibilities; a clearly articulated vision and mission with the goal of promoting children's bilingualism, biliteracy, biculturalism, and critical consciousness that is aligned with all program policies and practices; an equitable enrollment policy that prioritizes children who speak a language other than English at home, those living in low incomes, those with disabilities, and those who are Black, Latine(o/a) and other children of color; and other policies that address various aspect of programming including discipline, professional development, inclusion, etc.

- An additive language allocation (e.g., 50% Spanish, 50% English) in which children have dedicated time to learn academic content and engage in social interaction in both languages of instruction, with strategies and intentional opportunities for using the two languages at the same time to make cross-linguistic connections across all academic domains, to clarify instructions, to process new information, and to build children's positive identities as bilinguals.

- Research-supported pedagogy, curricula, and instruction that allows children to become bilingual and biliterate, with opportunities for children to learn language and to make connections across their two languages; and adaptations to the commercially-available curricula when necessary.

- Program-, classroom-, and child-level assessments that are culturally and linguistically valid; delivered in children's two languages; and used to evaluate program effectiveness, guide professional development and strategic planning, and tailor instruction to meet children's needs.

- A well-compensated and trained workforce in which the teacher who provides instruction in the partner language is paid the same as or more than the English-speaking teacher, and where all teachers receive ongoing professional development related to bilingual and biliteracy instruction, culturally sustaining pedagogies, and how to best support children who are emergent bilinguals with suspected/or identified disabilities.

- Family engagement and leadership that treats families as co-partners in their children's learning, in which their expertise is incorporated into the school and classroom, information is always presented in their language(s), and they are empowered to be part of the school's decision-making team.

- Children who are emergent bilinguals who have suspected or identified disabilities receive dual language education and special education services in the same classroom as their peers who do not have disabilities; they have opportunities for meaningful learning and social interactions with peers.

Studies show that emergent bilingual children who receive a dual language elementary education outperform those who receive English-only instruction in reading and math, in addition to learning English faster.

(8) Child groupings small enough to promote deep relationships, multi-age peer learning, individualized instruction, and effective learning

Humans yearn for and thrive in connection and in community.[147] Children learn through social interactions that are supported by warm, responsive, secure relationships. Their development and growth is greatly influenced and shaped by their interactions with their parents, siblings, extended families, teachers, and peers.[148] While adults are the primary influences on children's early development, as they grow, peers become increasingly important.[149] Indeed, the science of child development highlights the importance of creating a sense of community to foster children's optimal learning and development. Ratios, class sizes, grouping of children, and consistency in teacher-to-student interactions all play an important role in creating a supportive community of learners, positively impacting learning outcomes.

☑ Ratios and class sizes.

Adult-to-child ratios and class sizes have been a topic of education debate for decades, namely because smaller class sizes and more teachers in the classroom often require additional financial resources. Research indicates that lower teacher-to-student ratios (e.g. having two teachers, or a designated full time aide in a classroom) and smaller class sizes are associated with positive child development and academic growth.[150] A meta analysis found positive impacts across grade levels, with the most pronounced effects in elementary school.[151] One experimental study of elementary-aged children found that children in smaller class sizes (13–17 students) outperformed their peers in larger class sizes (22–26 students) across all tests, in every subject, and in every grade.[152] Other studies have found similarly positive impacts of small class sizes, with some showing the largest benefits for Black children.[153] Lower ratios and class sizes provide the foundation for teachers to implement dynamic continuous observation and assessment; design differentiated instruction; set up environments that are organized and foster calm, attention, and self-focus; and form stronger relationships with families and students. Of course, smaller class sizes and improved ratios must be accompanied by

other critical components of high-quality education, including skilled educators and a positive school climate. Still, smaller class sizes and improved ratios are a pre-condition, or enabler, of many of the reforms discussed elsewhere in this report. It should be noted that much of this research has been conducted in traditional educational settings and pedagogies. Some child-driven pedagogies and approaches, such as Montessori, have relatively larger class sizes. Importantly, however, these classrooms have mixed age groups and relatively smaller numbers of same age peers within a classroom and a deep emphasis — along with educator training and careful curated environments — on small group and individual learning.

☑ Looping and continuity.

Relationships are at the heart of human development and education. Relationships take time, energy, and intentionality to develop. Policies and practices that advance a continuity of relationships can foster trusting, sustained relationships among educators, students, and their families. Looping is when teachers and cohorts of children stay together across multiple school years, thus enabling stronger, longer-term relationships. When paired with qualified teachers who engage in responsive and affirming pedagogical and instructional practices, looping can set the conditions for teachers to deeply understand each child's unique strengths to inform the experiences and activities they offer to better develop students' mastery of skills. Looping enables educators to pick up where they left off with students at the beginning of the school year, reducing the startup time often required to build relationships across new teachers and student groups. For students in elementary and middle school, the minimal research available shows that looping results in enhanced teacher-student trust and interactions along with higher academic performance particularly in the subjects of math, reading, and language arts for students who looped at least two years compared to non-looping students.[154]

☑ Multi-age grouping.

Schools can foster community and shared learning through multi-age grouping. Multi-age grouping is when children across multiple age groups share the same space together and learn alongside one another, at times independently and at times together. This setup enables younger children to learn from their older peers and older students to serve as leaders and models for their younger peers and is associated with a range of positive benefits for children.[155] Multi-age grouping is common in preschool settings and some K–12 educational settings — such as in Montessori education, where children are generally organized in three year age groupings from 3–6 years-old, 6–9 years, 9–12 years, and so on. Importantly, some pedagogical approaches that utilize mixed age grouping, such as Montessori models, do so in the context of looping. So, the benefits are not only attributed to the mixed ages of the children, but also on the continuity of peer and teacher-child and family-child relationships. Mixed age grouping may also provide a longer runway for student differentiation, such that — for example — if a student is performing above grade level in math, that student can partner with older peers on that subject. The teacher is knowledgeable and equipped to provide guidance on content across multiple grade levels.

Core Indicators

- Limiting the number of students within classroom cohorts and ensuring small class sizes and appropriate adult-to-child ratios that are developmentally differentiated and in line with research (e.g., 17 or fewer children in the early grades with two or more adults).

- Intentionally grouping children across age groups (e.g., five- and six-year-olds together or seven- to nine-year-olds together), ensuring the environment and the educator are equipped to facilitate learning effectively across developmental and academic levels, and nurturing multi age friendships.

- Instituting looping, where teachers and peers stay together for at least two years (and ideally longer).

- Training teachers in curricula and instructional requirements across grade levels, with individualized tracking and instruction as a focus.

- Ensure that resources allow for multiple adults in pre-K and early grade classrooms.

ADVANCED LEARNING ACADEMY

San Antonio, Texas

The Advanced Learning Academy (ALA) is an in-district P–12 charter school in the San Antonio Independent School District with grades P–3 located on a separate campus. ALA uses a village model where, starting in Kindergarten and continuing through third grade, students remain with the same cohort of students and teachers. Students across villages and grade levels regularly participate in multi-age grouping activities, such as lunch, recess, community circles, and mixed-age project-based learning. Since the school's inception in 2016, they have used the village model to allow students to develop strong, lasting connections with their peers and teachers over several years as well as offer students opportunities to learn from and with their younger and older peers. For example, four days a week, students in grades K–3 participate in a mixed-age community circle where students engage in social-emotional activities as a group. Each school year, teachers have noticed both older and younger students improving their social skills over time, ultimately fostering a sense of community and belonging. Students are often seen interacting with each other beyond circle time, including during mixed-age recess or lunch.

> **The science of child development highlights the importance of creating a sense of community to foster children's optimal learning and development.**

⑨ A well-prepared, fully supported, diverse teacher workforce

Educators are at the center of creating joyful, equitable, effective learning environments where students can thrive everyday. Their preparation and professional development is crucial, but ensuring their wellbeing must be at the forefront of teacher workforce conversations. Well-being encompasses fair compensation, a healthy workload, time for planning, opportunities for professional growth, and participation in decision-making. In 2019, even after accounting for the shorter work year, teachers earn 20 percent less than college graduates who pursue other professions.[156] Teacher retention can be challenging, with research indicating that the majority of teachers who leave schools or the profession altogether do not leave because of compensation but because of poor working conditions (e.g., a lack of administrative support, resources for teaching, class sizes, testing policies, and inadequate input in decision-making).[157] Transformative school leaders understand that recruiting and retaining a diverse, well-prepared, fully supported teacher workforce is essential to a quality elementary school.

☑ A diverse teacher workforce.

Research shows that all children benefit from a diverse teacher workforce. Studies show important benefits to student-teacher racial/ethnic and language match for Black and Latine(o/a)children.[158] In particular, having a teacher of the same race is associated with improved academic outcomes, especially in math and reading, particularly for Black and Latine(o/a)[159]children. Having a teacher of the same race is also associated with increased graduation rates, decreased behavioral incidents, enhanced social emotional skills, and improved feelings of belonging. Children who have had a teacher of the same race also experienced feelings of being valued and cared for, resulting in better attendance and fewer disciplinary actions.[160] Importantly, diverse teachers are important for the experiences of all children — in forming cross-cultural connections, developing empathy and understanding, thinking critically, and preparing to function in an ever connected global economy. Ensuring a diverse teacher workforce that reflects the community it serves requires intentional efforts that extend beyond simply recruiting diverse teachers.[161] In fact, researchers have found that turnover rates are the primary driver of a primarily White teaching workforce. Teachers of color have been recruited at higher rates, but are more likely to be placed in

settings with higher stress and lower support, in turn feeding retention difficulties.[162] This may be a similar dynamic with teachers seeking alternative licensures or working on interim credentials. White women make up 75 percent of the teacher workforce, while only one third of U.S. public school children are White.[163] There have been efforts to recruit teachers of color over the past 20 years; however, myriad institutional barriers prevent teachers from diverse backgrounds from entering the field. There are also barriers that prevent the retention of these teachers in the profession, resulting in high turnover and attrition rates.[164] Institutional barriers that contribute to the low numbers of teachers entering the field include low-quality and underfunded K–12 schools that disproportionately serve Black and Brown communities; negative school experiences that may cause reluctance to return to the source of trauma that many people of color experience at school;[165] racially biased and expensive credentialing or licensing tests;[166] and the high cost of teacher education programs, especially student teaching that prohibits students from working while absorbing tuition and living costs.[167] In addition to these factors, potential dual language bilingual teachers may face barriers such as limited access to bilingual licensure options, licensure exams and other testing requirements that are required to be completed in English (even if they will be teaching a language other than English); immigration-related work permission challenges; inadequate compensation for bilingual skills; and ideologies that position their language practices as insufficiently academic.[168] As a result, dual language schools in numerous districts have resorted to recruiting teachers from other countries, who are not reflective of the communities they are serving and have little understanding of U.S. racial dynamics.[169]

☑ Opportunities for preservice and inservice professional growth.

Continuous professional development and coaching across an array of domains is critical, including developmentally appropriate instruction and assessment practices aligned with research; culturally sustaining and child centered pedagogies; authentic family partnerships; and supporting students' autonomy, emotion, and behavior regulation positively, not punitively. A well-prepared workforce requires all teachers to have the skills and knowledge to work with children and families that are developmentally, racially, ethnically,

culturally, and linguistically diverse. Professional development opportunities should be designed to learn and teach factual information and use intentional teaching practices that protect, uphold, and validate the culture, language and experiences of the children and families they serve. The content should include identifying and acknowledging cultural bias, positive assumptions and interactions, sharing and negotiating power, healthy identity development, deepening content knowledge, and educating elementary teachers on how young children learn.[170] Furthermore, professional development should be about teacher quality, growth, support, and effectiveness at the whole school level *and* at the individual teacher level. Teachers need individualized coaching and support to deepen their professional expertise. Deeply tied to growth is teacher evaluation, a process that should fairly and appropriately assess the performance and effectiveness of teachers to better understand teacher practice as it relates to student learning and experience.

☑ Teacher effectiveness and evaluation.

High-stakes testing and accountability policies have made it difficult to design assessments that measure teacher quality and effectiveness with teachers often being judged on their students' performance on standardized tests. Just as we ask teachers to consider the ways students learn best, teacher evaluation processes should be designed to support the ways teachers learn and grow in ways that meaningfully support their collective and individual needs. Considering this, teacher evaluation can take many forms but should at least include these four aspects: (1) self-reflection, or opportunities for teachers to share and examine their teaching experiences and practices and propose strategies for improvement and support; (2) peer evaluation, meaning that other expert teachers should be able to observe and give feedback to each other in ways that promote growth, trust and collaboration; (3) ongoing observation and feedback with opportunities for teachers to receive supervisory and peer feedback and support throughout the year;[171] and (4) measurement that includes classroom context, subject-specific pedagogy, and teachers' capacity to teach and support the needs of diverse learners.[172]

☑ Teachers at the decision-making table.

Teachers are quickly blamed for the conditions of schooling that result in achievement and opportunity gaps, but they are rarely acknowledged for their roles as gap closers[173] who navigate the conditions of schooling alongside the

ills of society to successfully meet the social, emotional, and academic needs of their students. Too often, the field has failed to treat them as experts and include them at the decision-making table, resulting in policies that are void of classroom realities. Teachers should be included in decision-making conversations regarding curriculum and instruction, assessment, professional development, and scheduling and the structure of the day, to name a few. It is also important to ensure that leadership opportunities for teachers are thoughtful of teachers' workload. Teachers should be paid for taking on leadership roles with time or money (e.g., a stipend or release time to participate in meetings during the school day). Teacher leadership should be diverse and inclusive, including the voices and experiences of teachers across race, gender, experience and seniority level, position (e.g. assistant teachers), and subjects (e.g., music teachers).

☑ Centering the day-to-day well-being of teachers.

Teacher stress levels and burnout remain elevated, which can result in numerous mental, physical and psychological challenges and can ultimately harm a person's overall well-being.[174] Various factors impact teacher well-being, including teachers' individual economic situations and access to health and mental healthcare. Structural school factors, such as class size and ratios, feelings of professional support and development opportunities, mental health support for students, length of the school day, and administrative duties, can also impact teacher efficacy and overall sense of well-being. Transformative school leaders know and understand this and work to ensure teachers are fully supported. Put plainly, teachers must have their needs met before they can meet the needs of their students. In addition to fair compensation and participation at the decision-making table, teachers need time — time to be in community with other teachers, time to collaborate with other teachers, time to get to know their students and families, and time to take breaks as needed. They also need to be trusted to do what is best for their students such as moving at the pace of students, as opposed to the pace of state standards and teaching accurate history, even when it is difficult. Teachers should also be connected to community resources, such as free after-school care and mental health professionals as needed. The best way to establish teacher well-being is to regularly assess the work climate and solicit teacher feedback on ways to improve wellness and reduce stress in the workplace.

Core Indicators

- Establish a recruitment and retention plan that ensures the teaching workforce reflects the diversity of the community of students it serves.

- Utilize ongoing training, coaching, and reflective supervision to ensure teachers have deep knowledge of child development; high-quality interactions, instruction, and assessment; subject matter expertise in the context of the science of learning; culturally sustaining practices; inclusive instruction for children with disabilities; dual language learning for multilingual students; and partnering with families from diverse backgrounds.

- Include teacher representatives in leadership teams, and ensure teacher voice is included in decision-making processes.

- Ensure teachers have collegial learning opportunities within and across their grade level teams.

- Provide ample opportunities for horizontal and vertical planning, particularly around children's transitions between grade levels.

- Support affinity groups and cohort models to support teachers' social identities and experiences (e.g., support and mentor groups for novice teachers; affinity groups for Black teachers).

- Establish a school culture of support and well-being, recognizing that teachers need breaks and time off to do their best work with the students they serve.

- Provide community resources to teachers as needed.

- Assess teachers' experiences in the workplace and use data to inform improved workplace policies and new strategies to improve teacher well-being.[175]

> **Transformative school leaders understand that recruiting and retaining a diverse, well-prepared, fully supported teacher workforce is essential to a quality elementary school.**

10 Culturally-grounded authentic family and community engagement that attends to the whole child and family

Family and community engagement must be relational and rooted in reciprocity if schools want to attend to the whole child and the whole family. Families play at least five roles in their children's education: 1) communicate high expectations; 2) monitor their child's performance; 3) support learning beyond the school day; 4) guide their child's education; and 5) advocate for their child's needs.[176] Additionally, families, when given opportunities to engage and connect in schools, bring expertise and lived experiences that can shape school culture and bridge the gap between schools and communities.

However, historically, schools have struggled with ways to center and engage families. Initially, when schools were explicitly designed to educate wealthy White males, parent involvement was limited to updates about a child's progress. As research began to find correlations between academic achievement and parental involvement, coupled with the Elementary and Secondary Education Act of 1965, efforts to increase parental involvement in schools increased. Despite this shift, schools still missed the mark: Rather than taking a communal approach, they employed individualistic models and approaches to involvement, which failed to center Indigenous, Black and other people of color's ways of being and engaging. As a result, family engagement was, and in most cases still is, transactional — more about compliance and less about engagement, especially for families of color.[177]

As calls for more inclusive schooling experiences have emerged, schools have made attempts to add to their parent engagement frameworks.

However, Bang et. al[178] reminds us of the following:

> To remedy this, many schools are turning to community partners to aid in the cultural education of students by establishing cultural nights or bringing in speakers for school-wide assemblies or classroom activities. Sometimes families are brought in for focus groups or listening sessions where they are asked to share their experiences and opinions with administrators or educators.[179] While these might be genuine efforts to include families in schools, cultural knowledge and practices are still positioned as extracurricular or peripheral to daily teaching and learning and have not had significant impact on increasing familial belonging

> nor do they reflect a foundational shift in paradigms which are in service of Indigenous thriving (p. 8).

Bang and colleagues remind us that adding anything to an unhealthy foundation is inadequate and will not work. At the root of a quality elementary school must be the desire and ability to grapple with the history of how family engagement (or lack thereof) came to be in this nation, which includes addressing its roots of assimilation and denial of educational opportunities. Schools must be willing to take up their own histories as sites of trauma and suffering (e.g., forced assimilation, segregation, discriminatory discipline policies and practices, lack of representation and misrepresentation in curriculum, low academic expectations, exclusion from specialized and advanced programs, etc.).[180] Schools must practice cultural humility — that is, an openness and honoring of other cultures and ways of being, paired with critical reflection and self-awareness of one's own cultures and ways of being.[181]

☑ Schools belong to the community.

Schools are extensions of the community. Quality elementary schools prioritize communal learning and recognize that learning is not linear or merely between a teacher and a child. Communities learn from and with each other (e.g., teachers learn with and from families; children learn with and from each other, etc.). School leaders must make time for connection and find rhythm between on-campus safety and community presence. Considering this, not only should families feel welcomed at schools, they also should know that the school belongs to them. Schools should have family resource centers and spaces, and families should also be able to be on campus to build community and support the development and growth of their children in ways that make sense for them and their children (e.g., parents having lunch with their children, parents on campus engaging in mini-lessons and fun activities, etc.). Moreover, family resource centers should go beyond parent education and include wraparound services that support the whole family (such as career readiness and training, community fitness, and mental health support), as well as serve as a gathering space where kinship and community is built. Beyond family resource centers, school

CREIGHTON SCHOOL DISTRICT

Phoenix, Arizona

The Creighton School District, along with many schools and districts throughout the country, provides free meals, and in some cases breakfast and lunch, to all children 18 years of age and younger throughout the summer. Children do not need to have a connection to the school to share a meal. Some schools are opening up their cafeterias and encouraging children in the community to eat on campus, which extends the idea of schools belonging to the community. The Creighton School District is also offering mobile stops and partnering with churches and community resource centers to ensure children who are unable to come to school are still able to receive meals. These innovative and community-centered approaches are important for schools truly committed to family and community engagement that attends to the whole child and whole family.

should communicate with families in their home languages and create space for educators to form authentic relationships with families, which requires schools to be responsive, flexible, and considerate of diverse work schedules and other family demands (e.g., providing child care and food for all on-campus events; having events beyond the school day and school year, including on the weekends and during the summer). Currently, we see aspects of schools belonging to the community in their capacity to serve as emergency shelters and voting locations. However, these acts of service are not typically driven by community but by local, county, and state decisions. Intentional efforts to make connections between schools and communities beyond academics can help shift involvement to engagement and partnerships with families.

☑ From involvement to engagement and partnership.

Most families are relational and deeply engaged in their children's learning and development. Parent and family engagement strategies must also be relational, which requires trust. Schools, by design, have not always operated in the best interests of families, especially for families of color, families of

children with disabilities, and other families from communities that have been historically marginalized. Considering this, schools must take time to get to know families and their experiences with schooling, individually, collectively, and intergenerationally. Most recently, school districts throughout the country have been using a re-imagined version of home visits to rebuild trust. Though home is in the name, these visits are opportunities for teachers to meet with families outside of school in any community spaces that evokes feelings of home (e.g., local park, public library, family home, etc.). Teachers are trained on how to participate in home visits and teachers are compensated for their time. Home visits are voluntary and scheduled at a time that works best for families; they are used to re/build trust and are guided by families being able to share their hopes and dreams for their child (Parent Teacher Home Visits, 2022).[182] Conducted in this way, home visits can provide opportunities for schools to go beyond involving parents to forging partnerships that can help schools and families better support children.

Core Indicators

- Clear purpose for family engagement that is for culturally responsive and sustaining for the families and communities you serve.

- Belief that schools belong to communities.

- Provide communal learning opportunities to build and sustain relationships within and across schools and communities.

- Time dedicated to getting to know the community before making decisions, such as decorating classrooms and planning family and community events.

- Families see reflections of themselves in all aspects of school (e.g., teacher and staff makeup, curriculum and instruction, pedagogy, visual representation, school activities and events, professional development and training, etc.).

- Family resource centers that provide wraparound services to meet the needs of the whole family and community are on or near school campus (e.g., credit repair workshops, fitness activities, washers and dryers for families to do laundry, hosting farmer's markets, keeping the school's playground open beyond school hours, etc.).

- Parents are provided with all child data that the school collects and keeps, including information on their child's learning styles, discipline records, assessments, and teacher reports.

- Employ democratic collaboration and decision-making as it relates to the design and implementation of policies, programs, and activities.

- Engage in an openness and honoring of other cultures and ways being, paired with critical reflection and self-awareness of one's own cultures and ways of being.

- Establish procedures that allow families access to schools and to their children during school hours (e.g. inviting families to weekly assemblies, inviting families to eat lunch with their children, inviting families to coordinate and facilitate games during recess, etc.), while ensuring the safety of all students.

- Ensure flexible times for engaging that consider diverse work schedules and other family demands.

- Employ a full-time staff person to coordinate, organize, and be a primary point of contact for families.

- Ensure families have a clear line of communication to share ideas, thoughts, and concerns with school leadership. Collect formal family input each semester through a family survey that is administered via multiple modes (e.g. online, phone, paper, and in person).

- Establish policies that nurture the teacher-family relationship, including setting 1:1 time slots for meet the teacher nights at the beginning of the year; require an initial phone call between families and teachers to get to know the child and family and set a positive tone for the relationship; offer a home/community visit in a location of the family's choice in the first quarter; invite families to present with their children about their family at the beginning of the year, etc.

> **When given opportunities to engage and connect in schools, families bring expertise and lived experiences that can shape school culture and bridge the gap between schools and communities.**

KERES CHILDREN'S LEARNING CENTER

Cochiti Pueblo, New Mexico

Without the official designation of being named a community school, the Keres Children's Learning Center (KCLC) is a school that was created for the community with the hope of reclaiming Pueblo education and preserving the Keres language. The school serves children ages birth through 18 and uses an intergenerational approach and a Montessori pedagogy. One of the most unique aspects of the school is their approach to working with families and communities. Near the top of their list of guiding principles are the following two guiding principles: (1) "KCLC recognizes that family life will come first. Family life includes parents, grandparents, siblings, extended family members, other important relationships (such as godparents), and the family we create through traditional ceremonies" and (2)" KCLC always values and nurtures the relationships between grandparent and child through genuine interaction."[183] These guiding principles are implemented in a number of ways, including through their mobile outdoor immersion classroom, which is designed to strengthen the daily use of Keres and to encourage cross-generational Keres fluency for students, families, and the larger Cochiti community. Since its inception, the mobile outdoor classroom has allowed classroom lessons to take place anywhere (e.g., in the mountains, at the river, etc.). All generations are represented on campus, including elders, and children and elders learn from and with each other. The school also implemented a mentor-apprentice program for elders to serve as mentors to parents to support parents' intensive Keres-language learning through communal activities such as sewing, shopping, and cooking. Additionally, in honor of the "family life will come first" principle, the school does not follow truancy laws or guidelines. The school does not penalize students and families who do not attend school, with the understanding that the community has needs and desires beyond the school. Rather than penalize families, KCLC works with families who do not attend school regularly in ways that support families' cultural way of life, with an understanding and awareness of the events, happenings, celebrations and hardships in the community that might impact everyday school attendance.

11 · A school climate that embraces children's identities, combats racism and bias, and prioritizes mental health and well-being

Children's social, emotional, and cognitive well being are key areas of development for young children that set the foundation for quality and direction of their future lives. A critical dimension of a healthy school climate is promoting mental health, social development, and emotional well-being, and, concurrently, combating bias, racism, and other forms of discrimination to ensure all children feel safe, seen, and a sense of belonging. These dual goals — promoting mental health and combating bias — require a close examination of school policies, procedures, and rules; ongoing professional development; adequate resources, including dedicated staff and staff time; thoughtful communication with students, staff, and families; and continuous assessment of how the school's climate is impacting children across social identities (e.g., race, class, disability, gender, etc.). A high-quality elementary school makes time to get to know the students and families it serves. It examines school norms, rules, and policies to understand how these are informed by and aligned with the cultures and community norms of the children and families who attend the school, and to understand how such norms and policies may disproportionately benefit or disproportionately harm students from various groups — including Black, Native American, Latine, or Asian students; students with disabilities; multilingual students; and students with diverse family structures, among others. School rules have often emphasized social ways of being that are focused on controlling children's bodies and movement, especially of Black children.[184] These rules often require students to walk, talk, sit, and even eat in specific ways or to ask permission to use the restroom or move to a different place in the classroom. Few adults experience these rigid rules in the workplace, and most children do not experience these rigid rules in other community settings. Moreover, these rules are often misaligned with children's abilities and developmental stages, setting them — and their teachers — up for failure.

Schools should build in opportunities for movement that are connected to children's developmental stages and their cultures and movement patterns at home.[185] Social development, by its nature, is relational, and schools without enough resources often deprioritize the relational components of learning that occur through positive peer, teacher-child, and teacher-parent relationships. When schools are equipped with personnel to structure classrooms with smaller class sizes and school psychologists or other staff who can offer instruction on social and emotional development, teachers are better positioned to create a nourishing classroom climate that supports development and academics holistically. Curtis and Carter call this a "nourishing classroom culture" (p. 22),[186] which is an educational environment that fulfills the whole child — mind, body, spirit, and heart. In a nourishing classroom culture, children are honored for their strengths; feel seen, heard, and valued; have spaces that promote collaboration and a sense of community; have opportunities to exchange ideas and develop shared knowledge; and are invested in through time, materials, and resources that enhance their family and cultural strengths.[187]

Social experiences and development at school are just as important as children's emotional experiences and cognitive development. The feelings elicited by the school from the moment that students arrive on campus shape their experiences and can be intentionally addressed. Developing children's emotional competence (understanding and ability to deal with the emotions of others) and emotion regulation (the ability effectively to deal with their own feelings) support children's well-being and school climate. Finally, cognitive development, including executive function, self-regulation, comprehension, attention control, and related constructs, not only supports children's academic performance, but also supports their future opportunities.[188]

Finally, it is important to consider whether gender should be more closely examined in the early grades, considering various trends in data — including discipline, engagement, and academic outcome data. It is important to note that the majority of teachers identify as female. The process of learning, especially in the early years, may require and reward skills such as verbal, fine motor skills, and self-regulation, which boys, on average, develop later. This developmental progress may influence teacher-child relationships and teacher expectations.[189] Research shows that

Black and Latino boys may have greater transition challenges, especially gifted boys, who may have verbal and cognitive acuity that is not being recognized and supported in the early grades, potentially leading to disengagement.[190] On the other hand, girls may also be harmed in the classroom because of their gender given the single and incomplete narrative that girls lack self-efficacy regarding strength in math and science. Furthermore, girls who may be perceived as high energy and direct may be viewed and rated as "rude" and "aggressive," potentially impacting their relationship with teachers and their learning experience. Finally, data shows that puberty is impacting girls at younger and younger ages worldwide.[191] Research shows that earlier onset puberty, especially in girls, is associated with a variety of mental health challenges, including increased depression, anxiety, and substance use.[192] Administrators should be attuned to these trends and to the health and mental health needs of children, especially girls, inside and outside of the classroom, during this vulnerable period. Each of these challenges may be amplified and even more complex for children querying their gender identity, transgender children, and gender non-conforming children.

Core Indicators

- Has onboarding and continuous professional development that builds critical awareness and focuses on enhancing 1) knowledge, 2) attitudes, and 3) practices to identify and combat bias across race, language, class, disability, gender, and their intersections.

- Has a diverse specialized staff to support children's social, emotional, and mental health needs, including school psychologists, school counselors, social workers, or other mental health providers trained on supporting students — including students who have experienced racism, discrimination, bias and other forms of racialized trauma.

- Prohibits expulsions except for extreme circumstances (e.g., firearms), and reserves temporary, short-term suspensions for extreme cases where the child's safety is in jeopardy. The suspension time is used to partner with families and secure whatever additional support may be needed for the student or the teacher.

- Allocate time for and compensate staff to support student mental health and well-being, including and especially staff (e.g. teachers, aides, cafeteria staff, PE coach, music teacher) who have existing relationships with children and share students' backgrounds (race, ethnicity, language, gender).

- Promotes student trust and responsibility by nurturing child agency, decision making, and freedom of movement.

- Prohibits the use of corporal punishment and seclusion in all cases.

- Disallows mechanical and chemical restraint in all instances and physical restraint in all but emergency situations. Ensures specific accountability measures are in place in cases of misuse; places limits on the duration and type of restraint; and requires a) training for those restraining children, b) timely incident reporting, and c) the triggering of an intervention and support plan. The need for restraint should be prevented through evidence-based programs such as Positive Behavioral Interventions and Supports (PBIS), Multi-Tiered Systems of Support (MTSS), or Universal Design for Learning.

- Has procedures to deploy rapid support in mental health crises that prioritizes student safety, leverages existing relationships with school personnel, and is followed by identifying future supports needed in partnership with families.

- Collects and disaggregates data to identify the root cause of behavior challenges — considering place, activities, climate, adults, and children — and implements changes in policy, practice, professional development, schedules, or procedures to address behavior.

- Has regular communication with families to identify and address school climate strengths and challenges.

- Establishes a school climate that attends to and has resources dedicated to meet the unique needs of children, including attending to gender and its associations with academics, social and emotional development, and discipline.

- Allocates resources and staff to promote child joy and fun across the school campus to increase student engagement and enhance school climate. Schools can survey children on what is fun and joyful to them in school and incorporate feedback meaningfully. Some schools have named a "fun ambassador" to think thoughtfully about joy and student engagement in the classroom and across campus.

12 Resources and policies that promote health, well-being, nutrition, and movement

☑ Child and family health.

Children's health and well-being is critical to learning and is deeply impacted by access to nutritious meals, movement, exercise, and respite. Research has established that 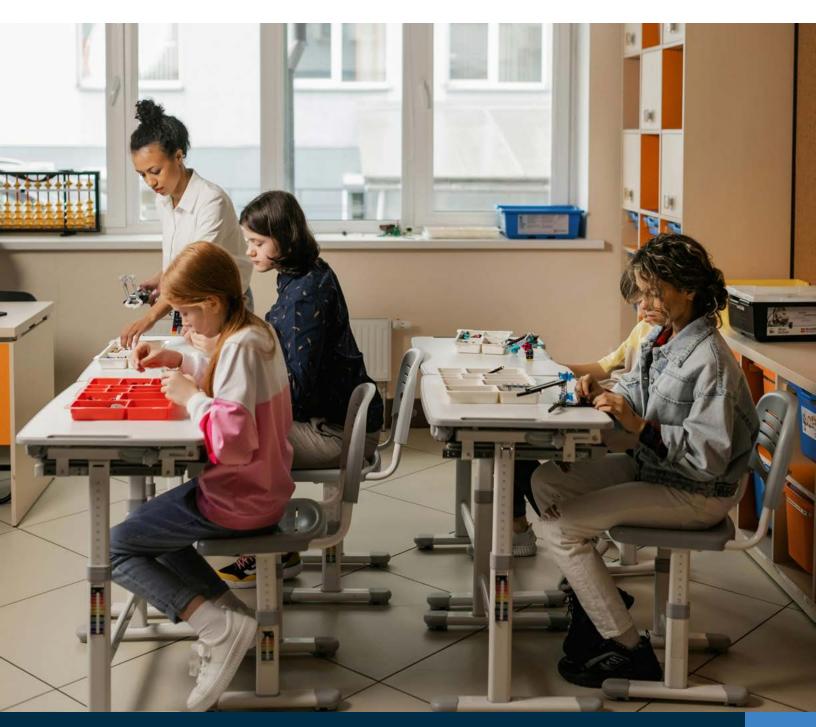poor nutrition, exposure to environmental toxins, and chronic stress — particularly during the early years — are associated with a range of biological factors that increase susceptibility to a range of chronic health conditions over the life course.[193] Millions of school-aged children do not receive recommended physical, mental, development, dental, hearing, or vision screenings, which impacts early detection and treatment for a variety of health conditions. Data indicate that Latine children, in particular, have the highest percentage of unmet health needs compared to all other racial/ethnic demographics, and that children in low-income families are much less likely to have access to a usual source of healthcare.[194] Children from historically marginalized communities are impacted by systemic racism and a resulting range of environmental conditions that directly impact health.[195] While health is often viewed as a result of individual decisions, research has found that upwards of 80% of health is determined by social factors, or social determinants of health — conditions in the environment where children are born, live, play, learn, and age.[196]

Schools have the potential to be positive social spheres in which children can access nutritious foods, engage in movement and exercise, and be connected to physical and mental health supports,[197] disproportionately benefiting students who otherwise have less access to health insurance and healthcare.[198] Attention to mental health is particularly critical now, considering the substantial increases in stress and mental health challenges noted across age groups and nations, post-pandemic.[199] A National Academies of Science Engineering and Medicine Study examining school based mental health supports identified a number of best practices, including schoolwide mental health screenings, establishing school-based mental health centers or providers, balancing academic opportunities with mental health, promoting healthy sleep and rest, building a positive school climate, and incorporating social and emotional learning into core instruction.[200] Connecting students and families to health resources, including accessing health insurance and affordable, quality, convenient healthcare, is a critical dimension of supporting children's health, well-being, development, and learning.

☑ Nutritious food and affirming mealtime routines and rituals.

Too often, in U.S. schools, children are fed highly processed, unappetizing food that is served in ways that resemble assembly lines. In some cases, children are required to eat in 15 minutes or less, sit while they eat, and forgo talking or socializing during meals, whether formally as a matter of school policies or practice.[201] Very few adults have lunch under these conditions, short of some military, factory, or prison settings. There are a number of factors that impact this dynamic, including under-funding of the school lunch program; school policies that shape personnel practices; the pressure to squeeze in as many instructional minutes as possible; removing time from periods of respite, including lunch and recess; and school climate, which often prioritizes control and efficiency over child agency. In most cultures, mealtimes are generally times of commune. In many professional settings, major decisions are made and problems are solved over shared meals. These conditions are particularly concerning, considering these meals are the only meals many children who experience food insecurity have. Food insecurity affected nine million children in 2020,[202] with the rate of food insecurity among Black and Latine children being more than twice that of White children.[203] Food insecurity has been shown to negatively impact the development of children, including delays in cognitive development, poor academic outcomes, and mental health issues.[204]

☑ Recess, physical exercise, and gross motor play.

There is a robust and long-standing literature base investigating the role of recess in overall child health, well-being, learning, social development, and achievement.[205] Like all people, children need unstructured breaks where they can move, socialize, explore freely, and have time to themselves or with their peers. Indeed, research finds that after recess children demonstrate sustained attention and

are more able to attend to cognitive tasks in the classroom, regardless of the activities children chose to engage in at recess (e.g. social, physical, or structured).[206] Recess also has social and emotional benefits: Research finds that children's social development unfolds during recess in ways that are less possible inside the classroom, including acquiring and practicing skills such as negotiation, cooperation, coping, and perseverance.[207] Recess is also associated with fewer behavior challenges as rated by teachers and schools.[208] There are also physical health benefits associated with recess, via physical movement — however vigorous or minimal — than the limited movement afforded in most classroom settings.[209] Finally, and most importantly, children simply deserve breaks and to experience the joys of being children.[210] Indeed, the UN Convention of the Child asserts that children have the freedom to play and take breaks. Considering they spend many of their waking hours at school, recess is a key dimension of that. Unfortunately, research indicates that Black children, children from low income households, and children in public schools are much more likely to have no or minimal recess. The same study found that recess was associated with fewer reported class behavior challenges by teachers.[211] One study randomly selected a school day to investigate the question of "who" has access to recess. Researchers found that while 85% of White students had recess, only 61% of Black children and 75% of other children of color had access. In examining income levels, 83% of children living above the poverty line had recess, compared to only 56% of those living under it.[212] Researchers have found that even in places that do offer recess, Black and Latino boys are the most likely to have it withheld for cited behavior reasons,[213] even as the American Academy of Pediatrics has recommended against removing recess as a form of punishment.[214]

Children's health and well-being is critical to learning and is deeply impacted by access to nutritious meals, movement, exercise, and respite.

MONTECITO COMMUNITY SCHOOL

Phoenix, Arizona

Montecito Community School is the first public district school in Arizona to offer a dual language Montessori program. Montecito offers family-style dining for students at lunch. While the school still participates in its district's regular breakfast and lunch programs and lunch takes place in a traditional school cafeteria, the student experience is different. Everything in the cafeteria, such as the tables and chairs, are designed for children, meaning everything is at eye level. Fresh flowers are placed in the middle of the table. Students all sit together at one large, rectangular table, with children serving themselves whenever possible. For example, milk cartons do not appear on the tables; instead, milk is served and poured from a pitcher. Children rotate throughout the school week helping to set the table for their peers. Though typically seen in child care and Head Start settings, family-style dining has benefits for children and adults of all ages, including promoting language and vocabulary development, social-emotional development, and healthy risk-taking in the form of children trying new and often healthier foods.[215]

Core Indicators

- Examine existing contracts with school food suppliers to ensure nutritious food that is not processed and is low in sugar. Explore community and local options for food supply.

- Provide school health professionals on campus who respond to emergent and routine health concerns during the school day and build relationships with families to connect them to health resources in the community, including health insurance, a medical home, dental and mental health care, and nutritious food.

- Provide nutritious food that is not processed and is low in sugar, and includes fresh fruits, vegetables, whole grains, etc.

- Provide ample time to eat — sitting, standing, or however children are most comfortable — while they converse freely with peers.

- Make nutritious food, such as fruits and vegetables, regularly available throughout the day for children to eat if they are hungry in between the designated times for breakfast, lunch, and/or snack times.

- Practice family-style dining as often as possible, in line with or similar to the **Head Start model** and aligned with allowances in the Child and Adult Care Food Program.[216]

- Provide multiple opportunities for gross motor free play, including three or more indoor or outdoor recess periods no shorter than 15 minutes.

- Provide daily physical education or organized group physical play (e.g. sports; dance; organized gross motor games).

- Offer free and accessible nutritious meals for families with policies, including over the summer, that prevent and/or forgive previous school meal debt.

- Make healthy snacks and clean water freely available throughout the day in classrooms and throughout campus that children can access when they are hungry or thirsty.

13 Multi-level data used to individualize instruction, tailor professional development, and inform policy

Data provides critical information at the school, classroom, and child level that can inform school policies and practices, professional development, individualized instruction, family partnerships, and more. Multidisciplinary teams of administrators, teachers, coaches, psychologists, therapists, and parents, can gather and review data across levels to provide a holistic view of school operations and children's experiences and outcomes, to support ongoing quality improvement efforts.[217] Below, we outline key considerations for assessments and data at the child, classroom, and school levels.

☑ Child-level measures.

Child-level data should be gathered thoughtfully to tailor instruction to children's individual needs, and address growth and development across all subject areas, socioemotional development (including mental health screeners), and measures of children's school attitudes, engagement, motivation, and joy.[218] Child-level measures should go beyond standardized measures and be multi-faceted, including screenings to identify children who need additional support and/or referrals for special education evaluations and informal measures to assess children's growth and response to intervention. These formal and informal assessments should be ongoing, starting at the beginning of elementary school. For the data collected to be valid and helpful, the education team needs the training, practices, and measures that will capture children's performance as accurately as possible to ensure that children are not over or under misrepresented in special education.[219] Data should be used to make individual learning goals and set intervention strategies, and children given more targeted instruction and/or referred to special education evaluation in a timely manner when they are not making adequate progress. This process of gathering and analyzing children's data to inform their instruction is called Multi-Tiered Systems of Support (MTSS).[220]

There are three ways educators can ensure that the child measures used are valid to reduce the potential of misinterpreting children's abilities. First, the education team should avoid relying solely on standardized measures.[221] Instead, they can gather information about children's performance using a variety of comprehensive measures, including formal and informal measures, classroom observations, parent input, language and work samples, curriculum-based measures, rubrics, and dynamic assessment (i.e., an approach in which children are tested-taught-restested to identify their current level of performance and how much support they need to reach the next learning level).[222] Second, the education team should be trained on how to select measures and implement assessment procedures that are linguistically and culturally valid.[223] This means that emergent bilinguals are assessed in English and their partner language (with the help of an interpreter if needed);[224] dialectical differences are not considered pronunciation or language errors in children who speak different varieties of English, such as African American English and Southern American English;[225] the education staff is trained on how to validly assess children from linguistically, culturally, and racially diverse backgrounds; adequate accommodations are made to assess the skills of children with disabilities;[226] and ongoing data is collected to ensure that children's academic difficulties are not arising from insufficient instruction or lived experiences. Third, the education team should have concrete procedures for ensuring that the interpretations of the data are valid and strength-focused, and should share all the data with families using language and visuals that are easy to understand.

☑ Classroom-level measures.

At the classroom level, measures should be used to determine the quality of instruction, teacher-child interactions, and the organization and utilization of the learning environment. For example, observation measures can be used to determine teacher's use of research-supported literacy instruction and the extent to which teachers engage children in rich linguistic environments through back-and-forth conversations and open-ended questions. Classroom-based measures can also provide insights with respect to classroom climate, inclusion, belonging, and potential biases that children from historically or contemporarily marginalized communities are disproportionately more likely to encounter. Equity-focused measures can examine the extent to which educators are implementing inclusive instruction for children with disabilities, culturally responsive instruction, and whether they are engaging in interactions that demonstrate awareness and mitigation of implicit biases- both adult-child and peer to peer. Both observational and teacher-reported instruments

exist to capture various dimensions of these concepts in the elementary years. For example, general teacher quality observational measures such as the **Research-based Inclusive System of Evaluation (RISE)** and **Leading Effective Academic Practice (LEAP)**, **Ohio Teacher Evaluation System (OTES)**, or domain-specific measures such as the **Instructional Quality Assessment (IQA) Mathematics Toolkit**, can be used to evaluate the quality of teachers' instructional practices and determine personalized professional development goals. Examples of measures designed to measure equity-focused classroom practices include the *Assessment of Culturally and Contextually Relevant Supports*[227] and the *Culturally Responsive Classroom Management Self- Efficacy Scale.*[228] While there are currently very limited classroom measures of teachers' practices specific to English learners, and particularly for ELs/emergent bilinguals in dual language education settings, the state of New York has an **example schools can adapt** to develop their own classroom observation model specific to English Learner/multilinguals. The Teaching and Learning section of **Head Start's Dual Language Program Assessment (DLLPA)** can also be adapted for elementary-aged students. Further research is needed to develop measures that specifically evaluate teachers' implementation of inclusive practices for children with disabilities in K–12.

☑ School-level measures.

School-level measures can also be used to gather information about student, family, and educator well-being using school climate surveys; to identify families' interests, priorities, and needs; to learn more about the resources that exist for families and children in their community; and to identify potential gaps in training, resources, materials, etc. For example, school climate reflects the extent to which students, families, and personnel are socially, emotionally, civically, and ethically well. Research shows that when schools use school climate surveys, they can better address risk prevention, mental health, school reform, and socio-emotional well-being, making them into schools that are more positive, safe, and responsive, for everyone involved.[229] In recent years, there has been a growing emphasis on addressing schools' use of equity-focused practices across all its systems. Research has shown that school-based measures, including school climate assessments, are often lacking specific equity indicators; thus, it is necessary to adapt measures or use additional measures to specifically assess the extent to which schools are implementing equitable practices.[230] The National Academies for Science, Engineering, and Medicine (2020) and Virginia's Department of Education[231] provide guidance on the equity indicators that can be assessed in

K–12 schools and classrooms, with examples on how different states and school districts have implemented these indicators. Community needs assessments are also key complements to school-wide measures and can be helpful in identifying the strengths, resources, and gaps that exist in the neighborhood where schools are located. Examples of the type of data that can be gathered from community assessments include major community needs, services and resources in the community (e.g., health, economic, housing, food, library programs, GED or English classes, entrepreneurship trainings and support, etc.), demographic characteristics of community members (e.g., race and ethnicity; language(s); number of children entering Kindergarten), early care and education landscape to understand children's previous learning and care experiences, and key partners that the school can collaborate with to support children and families. **Head Start's Dual Language Learners Program Assessment** offers an example of how program-wide supports for children who are emergent bilinguals and their families can be assessed across management systems (e.g., communication, hiring, fiscal management, professional development, etc.) and program services (e.g., teaching and learning, family engagement, etc.). This assessment can be adapted for elementary schools to help identify areas of strengths, as well as identify areas of growth that can become the focus of strategic planning and ongoing quality improvement. These types of community and school-level assessments can be combined with publicly-available databases such as the Child Opportunity Index, which provides data on indicators like air quality, access to green spaces, areas of concentrated poverty, and food deserts.

☑ Data-based decision making to inform instruction, professional development, and planning.

Data-based decision making refers to the use of child-level, classroom, school, community, and state data to identify strengths and needs, set goals as part of strategic planning, determine professional development goals, and individualize children's instruction and measure their growth over time.[232] A Multi-Tier System of Sustaining Strengths and Support (MT4S)[233] decision-making framework is designed to provide children with tailored instruction and supports to meet their needs and build on their strengths. MT4S has four tiers. Tier 1 is the universal, research-supported instruction that each child receives. Tier 2 is the targeted small group intervention children receive when they are needing extra support to acquire the skills address in the general curriculum. Tier 3 refers to the individualized, intensive one-on-one or small group instruction that children may need in particular skills. Tier 4 focuses on identifying and enriching the strengths children already have

(e.g., providing a child who is artistic with opportunities to continue advancing the skill). Within an MT4S approach, data is used to identify which children may need Tier 2 or Tier 3 instruction, to identify what strengths children have in Tier 4, and to monitor children's progress over time. Children are moved through tiers if they need additional instruction to make progress toward their learning goals. In ideal elementary schools, MT4S will be implemented, and the education teams meet throughout the year to review their school, classroom, and child-level data. Policies and procedures should specify processes for data collection, analysis, and most importantly use to inform policies, practices, family outreach, professional development, and individualized instruction. All data should be disaggregated by social demographic characteristics at the child and adult levels, including race, ethnicity, gender, disability, language, income, etc. Data sharing is a critical dimension for family partnerships. Schools should ensure that all child- and classroom-level data are shared with families transparently and in their home language(s).

Core Indicators

ASSESSMENT PRACTICES

- Assessing children to identify their strengths and needs and providing them with more targeted instruction in particular areas as needed, including academic subjects; social, emotional and behavioral development; communication; and gross motor development.

- Using various forms of child-level data, including portfolios, work samples, learning stories, dynamic assessment, etc., and offering children options for how to show what they know.

- Ensuring that child-level assessments are linguistically and culturally valid, by considering children's language(s), dialect(s), and prior exposure of content being assessed when administering and interpreting assessments.

- Conducting bilingual assessments to multilingual students, with the help of interpreters when needed.

- Ensuring that the responses of children who speak different dialects of English, such as African American English and Appalachian English, are not scored incorrectly when their responses are consistent with their dialect.

- Administering an array of observational classroom instruments to understand the quality of the learning environment, including using assessment tools that

specifically address adult-child interactions, culture, climate, bias, bilingual support, and inclusion practices for children with disabilities.

- Using school-level measures to identify the experiences of children, families, and personnel, including their sense of safety, belonging, joy, and socioemotional well-being.

- Conducting community needs assessments and using other publicly available data to identify community strengths, challenges, and needs to inform school partnerships, resource allocation, and wraparound services.

DATA-BASED DECISIONS

- Sharing school, classroom, and child level data with all relevant parties, including parents, teachers, and other members of the education team (e.g., psychologists, social workers, and therapists) — consistent with all applicable local, state, and federal privacy laws — in ways that are accessible to families, and in the language(s) they speak.

- Centering students' voices in parent-school conferences by inviting students to share work samples, as well as their goals and additional needs, with their families and teachers.

- Using data to guide professional development, tailor children's individualized instruction, inform resource allocation and policy changes, and refer children to special education evaluations or for additional resources as needed.

- Establishing data review meetings with teachers routinely to review classroom and child-level data to create and implement plans to improve instruction and to identify children who might need individualized or small-group targeted intervention.

- Ensuring that all data are disaggregated by all demographic variables (e.g., race/ethnicity, language(s), etc.) to understand differences in children's, families', and personnel's access to resources, experiences, and outcomes.

- Collecting school climate and child/staff well-being data and using it to inform resources allocation and school climate policy changes.

- Collect disaggregated data on the use of harsh discipline, with an emphasis on disaggregating data to identify discipline decisions that are most vulnerable to implicit racial biases (i.e., vulnerable decision points).[234]

14 Safe, healthy, aesthetically pleasing, child-centered learning environments

The way that classrooms and schools look and feel when spending time in them — as well as the architectural design and physical setup — play a critical role in how students access and experience learning.[235] Students deserve learning environments that are safe and healthy, as well as aesthetically pleasing. School facilities should be universally accessible to children with and without disabilities (including for those with sensory needs); nurture well-being; and support learning, exploration, collaboration, and creativity. High-quality elementary schools ensure the provision of clean water and clean air, indoor and outdoor learning spaces, community and culturally relevant art and music, and landscaping that encourages connection with the natural world and enables nature-based learning for students of all abilities.

☑ School safety.

A school's first priority to children and adults is safety. Horrifically, this has not been the case in too many tragedies. The mass shootings at Sandy Hook Elementary and Robb Elementary, and many other schools, have taken the lives of students and staff, permanently impacted the lives of families and communities, activated parents across the nation, and put the issue of school safety front and center. Earlier this year, the U.S. Department of Justice published their critical incident review of Uvalde and included a resource for schools outlining lessons learned and recommendations for moving forward. Previous school shooting commissions, including the Marjory Stoneman Douglas High School Public Safety Commission and the Sandy Hook Advisory Commission, provided a number of lessons learned, emphasizing that controlling access to the school and preventing unauthorized access using fencing, setting up single access points, and ensuring all doors have internal and external locks, are all important steps. In addition to physical facility access, schools must work to nurture a positive school climate and forge strong connections with families and communities. Trauma-informed rapid response crisis intervention plans must be in place to support students or staff who are having a mental health crisis. Plans and training for all staff on what to do should an active shooter enter the school's campus is also critical. These plans must include coordination with law enforcement, how the school will be locked down, and how the school will communicate with families. Limited research exists on the benefits of including students in school shooter drills, but if

schools elect to, or are required to, engage in these drills, it is critical that they are done in communication with families, with children's developmental stages in mind, and in consultation with experts like child psychologists or child mental health specialists. The Department of Homeland Security maintains schoolsafety.gov, which curates school safety resources from across federal agencies, including on how schools can prepare themselves for active shooter situations.[236]

☑ Clean and toxin-free drinking water.

Clean, freely accessible water is critical to human life. Both the Environmental Protection Agency and the Centers for Disease Control and Prevention have stated that there is no known safe level of lead in a child's blood.[237] Consuming water with unacceptably high levels of lead or other toxins can result in an array of health and developmental challenges and delay that may be irreversible. In 2018, the Government Accountability Office issued a report surveying school districts' approaches to testing for lead. The GAO found more than 40% of districts, serving approximately 12 million students, did not test for lead. In those districts that conducted testing, representing close to 35 million students, more than a third found elevated levels of lead.[238] District and school leaders should ensure that their state is participating in the EPA's Voluntary School and Child Care Lead Testing and Reduction Grant Program.[239] These funds are awarded on a noncompetitive basis to all states and the District of Columbia — meaning if a state requests funding, they will receive it. Funds can be used for both lead testing and remediation.

☑ Lead and toxin free paint and furnishings, clean indoor air.

State law and district practices are uneven with respect to monitoring, remedying, and informing families of exposure to toxins, whether through water, air, or materials. Schools should conduct environmental testing that assess carbon dioxide, polychlorinated biphenyls (PCBs) and other toxins, particularly in older buildings and in buildings with newer furniture to assess clean indoor air quality for children.[240] The Centers for Disease Control and Prevention has found an array of negative outcomes associated with exposure to PCBs, including developmental challenges and skin and liver ailments, among others.[241] Investigative reports

have identified high levels of exposure to PCBs and other substances in school buildings via old lighting fixtures and other materials, causing a range of health concerns in students and teachers.[242]

Ensuring high indoor air quality is crucial for the well-being of children, especially in environments where they spend significant time.[243] Adequate ventilation plays a key role in this, as it helps reduce the concentration of indoor pollutants and allergens by allowing fresh outdoor air to circulate.[244] Research demonstrates that effective ventilation systems are instrumental in lowering levels of allergens and indoor contaminants, which can significantly enhance children's respiratory health and cognitive development.[245] Additionally, reducing the use of unnecessary chemicals, such as those found in air fresheners, perfumes, and certain types of furniture, further contributes to a healthier indoor environment. Thus, maintaining well-ventilated, chemical-free spaces is essential for supporting the overall health and development of children.

☑ Light and color.

Light and color are pivotal architectural elements in learning environments that possess the ability to shape children's cognitive development, emotional well-being, and sensory engagement.[246] Both light and color designs can foster or hinder children's feelings of connection and sense of belonging within these spaces.[247] Harnessing the energy produced by light and color can evoke varying emotional responses, and this impact is particularly pronounced in children. Research suggests that the strategic utilization of color and lighting influences children's capacity for learning.[248] While natural daylight is preferred in educational settings due to its positive impact on mood, concentration, and academic performance,[249] artificial lighting systems that replicate natural light patterns can be implemented in areas with limited access to daylight. These systems should aim to minimize glare and harsh shadows for optimal learning conditions. Warm colors such as red, orange, and yellow are often linked with heightened energy levels and stimulation, though excessive use may lead to restlessness and difficulty concentrating.[250] Conversely, cool tones like blue and green are known for their calming properties, promoting relaxation and improved focus, making them more appropriate for areas designated for quiet activities.[251] The strategic application of color can assist in wayfinding and organization within school premises, aiding children in navigating the space efficiently.[252]

☑ Temperature.

Crafting an ideal learning atmosphere involves meticulous attention to temperature and humidity levels. Studies indicate that maintaining temperatures between 68–74°F (20–24°C) and relative humidity around 50% is optimal for ensuring student comfort, attentiveness, and academic performance.[253] Departures from these ranges can result in discomfort, lethargy, and physiological strain, impeding cognitive function and obstructing learning.[254] Educational institutions can achieve consistent and comfortable thermal conditions by prioritizing installing and maintaining HVAC systems, effective insulation, strategically placing windows, and using energy-efficient building materials.

☑ Outdoor learning and play.

Designing landscapes with children in mind means integrating natural elements, as nature has been proven to have a therapeutic and calming influence on children.[255] Research demonstrates that outdoor play and exposure to nature enhance children's cognitive development, emotional health, and physical well-being.[256] Playgrounds where children can engage in social, physical, and pretend play are essential to a child's development and learning. The physical design of these spaces should promote inclusivity that exceeds the Americans with Disabilities Act (ADA) guidelines, interaction, multisensory experiences, and opportunities for children to be challenged.[257] Additionally, in schools designed with a focus on health and well-being, incorporating green spaces such as gardens, lawns, trees, and safe outdoor areas creates an inviting atmosphere that encourages creativity and sensory exploration through play. The inclusion of natural features like trees, flowers, and water elements in school landscapes have been shown to reduce stress and enhance concentration among students.[258] These outdoor areas should be planned to promote physical activity, social interaction, and imaginative play while allowing children to connect with nature. Additionally, adopting sustainable and eco-friendly practices in landscaping design and maintenance is crucial. This may involve using native plant species, implementing water-efficient irrigation systems, and selecting environmentally friendly landscaping materials. Sustainable landscaping methods, such as incorporating native plants and permeable surfaces, can help mitigate environmental challenges like stormwater runoff and urban heat islands.[259]

☑ **Accessibility and inclusion.**

A holistic approach to education must prioritize equitable opportunities for all children. In fostering supportive environments that nurture children's holistic development, the design of learning spaces must embrace inclusivity as a core principle. This involves thoughtfully considering the unique requirements of children with and without disabilities (including for those with sensory needs).[260] Designers and educators play a pivotal role in championing universal design principles that proactively address potential barriers. Ensuring seamless wheelchair access, integrating sensory-friendly elements such as soft lighting and sound-dampening materials, and providing adaptable furniture and equipment tailored to varied physical and cognitive needs are essential steps in creating inclusive spaces.[261] By thoughtfully optimizing environmental factors like acoustics, color contrast, and natural lighting, educators can craft immersive learning environments that cater to diverse sensory processing styles and enhance the educational experience for children with visual or auditory differences.[262]

THE NEW KENNEDY SCHOOL

Phoenix, Arizona

The New Kennedy School, set to open in Fall 2024 in the Creighton School District in Phoenix, AZ, is planned as an outdoor learning, student-centered environment that nurtures curiosity, creativity, and collaboration among students. The outdoor learning spaces include a community garden, vegetable garden, pollinator garden, treehouses, outdoor learning labs, outdoor dining, and eco-friendly play areas. In addition to promoting discovery and community, the school is designed to develop students' awareness about environmental sustainability and responsibility through project based learning. The original school (Larry C. Kennedy Elementary School) was demolished because the building was deteriorating.

Core Indicators

- Prioritizing school safety through a trauma-informed lens, including developing safety plans informed by research and data, in partnership with families, and in consultation with and support from child psychologists and child mental health specialists. These plans should include facility upgrades and considerations, such as preventing unauthorized access through single access points and ensuring all doors have internal and external locks, staff plans and training, and internal and external communication systems to communicate with families and law enforcement, or other relevant parties, as needed.

- Monitoring school buildings to ensure they are free of lead, mold, and PCBs, and other environmental toxins. If toxic exposure is found, families should immediately be notified, exposure is immediately cut off, and remediation plans are established that address facility concerns and support affected students through resources.

- Monitoring indoor and outdoor air quality to inform daily activities, and ensuring classrooms and common areas (e.g. cafeteria; gym; office) have air filters to clean air and, when possible, the ability to open windows to let in fresh air.

- Ensuring that children and staff have regular and free access to filtered, clean water in the classroom and throughout campus that is regularly tested to ensure it is lead-free; establishing and implementing a remediation policy if lead or other toxins are found in drinking water that includes immediately informing families, cutting off access to the contaminated water, and supplying bottled water to children and staff until underlying issues are addressed and water is safe for drinking.

- Ensuring that furniture in classrooms and common spaces is age-appropriate for both children and adults and does not have flame retardant or other toxic off gassing.

- Ensuring classrooms have windows that provide access to daylight and that are at a child eye level so that children can see; augmenting classrooms with indoor lighting as needed.

- Thoughtfully considering wall decor and color; balancing between children's sense of ownership (e.g., student artwork, pictures, etc.) and busyness, which can cause distraction and overstimulation; ensuring important prints placed at students' eye level.

- Providing playgrounds that are accessible and developmentally appropriate for all children and incorporate facets of nature.

- Creating outdoor classroom spaces and establishing policies and practices that enable teachers to use the space with their students, formally extending learning beyond the indoors.

- Implementing universal design principles across campus — including indoor facilities and outdoor areas — to ensure accessibility for children and adults with varying needs and abilities.

CONCLUSION

The COVID-19 pandemic widened cracks in our education system that were there from its earliest days. Every student was impacted. A return to the status quo will not close pandemic related gaps or those that existed long before 2020 and it will not bring students back to school, solving the chronic absenteeism crisis schools are facing. Innovations have been happening in schools for generations. Decades of research have examined various dimensions of school operations — assessment, teacher preparation, curriculum, literacy, school climate, school leadership, and so on — but a full picture, critically analyzing each domain and knitting learnings and innovations together has been lacking. This report identifies 14 core ingredients that when put together, can help us move toward transformative, quality elementary school experiences for each and every child, informed by data and research, and illustrated through clear and concrete examples. In order to realize these ingredients, key enablers must be in place that include adequate resources and supportive policies at the school, district, state, and federal levels.

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