COVID RELIEF PLAYBOOK

SMART STRATEGIES FOR INVESTING FEDERAL FUNDING

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About FutureEd

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FOREWORD

Unprecedented sums of federal money are flowing to states and school districts to address the ravages of the coronavirus pandemic—a total of nearly $190 billion in three rounds of funding over the past 15 months. These funds are matched by the magnitude of need. It is hard to overstate how profoundly the Covid crisis has disrupted the nation's educational enterprise.

To help state and local policymakers spend these federal funds effectively, FutureEd has assembled a playbook of 18 research-based educational interventions proven to enhance instructional quality, school climate, student attendance or student achievement. We explain the rationale for each intervention, summarize and rate the strength of the supporting research, and provide insights into implementation.

FutureEd team members Phyllis Jordan, Brooke LePage, and Catherine Dragone authored the project with guidance from Matthew Kraft, FutureEd's research director. Sara White, a researcher at the National Student Support Accelerator at Brown University's Annenberg Institute and an expert on federal research ratings, scored the research supporting each intervention. Nathan Kriha, Molly Breen and Jackie Arthur provided editorial support.

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Thomas Toch

Director, FutureEd

INTRODUCTION

Disrupted for more than a year by the Covid pandemic, U.S. public education now has a substantial opportunity to rebound. An unprecedented infusion of federal money—totaling nearly $190 billion in three rounds of funding—will support the efforts of school districts and charter schools to reopen classrooms safely, help students accelerate academically, and, we hope, gravitate to new policies and practices that improve educational opportunities and outcomes for all students. The challenge in the weeks and months ahead is to use the money on strategies proven to boost learning. In that spirit, the latest federal Covid relief package, the American Rescue Plan, requires states and school districts to spend a portion of their funding on "evidence-based interventions" to address lost learning.

To meet the federal requirement, state and local administrators must identify their students' specific needs and determine what practices best address them. In this playbook, FutureEd highlights 18 evidence-based interventions that have delivered improvements in instructional quality, school climate, student attendance or student achievement—and sometimes all four. We explain the rationale for each intervention, summarize and rate the strength of the supporting research, and provide insights into implementation. Sara White, a researcher at the National Student Support Accelerator at Brown University's Annenberg Institute and an expert on federal research ratings, scored the research supporting each intervention.

Recognizing that the relief money must be obligated by September 2024, we have not proposed widespread hiring or other spending that would be hard to sustain once the federal funding ends. Some of the interventions, however, might involve short-term hires that could be sustained through partnerships with community-based organizations.

The playbook is centered on four key priorities for students: more time for learning; reengagement with school; a welcome school climate; and a strong, diverse teacher workforce using a high-quality curriculum.

In order to support students' academic, social and emotional development, states and districts must first and foremost provide more time for learning. This effort is already underway, with districts nationwide offering summer programs that include academic and social-emotional components. Starting in the fall, schools should offer extended day programs and tutoring and mentoring initiatives. In addition to providing academic support, these initiatives and others can help restore the connections students feel to school and reduce chronic absenteeism, which robs students of the necessary time on task.

Reengaging students, families, and the broader community in school life is also critical at this juncture. Many families remain concerned about returning to in-person instruction, especially if younger students are not yet vaccinated. Home visiting programs can help reassure families and connect them to their children's teachers. Community collaborations, whether through Community Schools or data-sharing coalitions, can harness the energy of other public agencies and nonprofit organizations to support student learning. Early warning systems can help schools and community partners identify students who need support.

A healthy, welcoming school climate is also key to getting students back on track academically and socially. Schools should adopt evidence-based approaches

to creating an equitable discipline system, motivating students, and providing mental health support. Schools must also ensure that students have access to mental and physical health services and that classrooms and buildings are healthy places to learn.

Finally, evidence-based practices can address two essential components of learning: teachers and curriculum. Schools and districts should work toward creating a diverse teacher workforce, adjusting mindsets about student achievement, getting good teachers into every classroom, and ensuring they have access to high-quality curricular materials.

DEFINING "EVIDENCE-BASED"

The American Rescue Plan requires that school districts spend at least 20 percent of the money they receive on evidence-based practices, a term with specific meaning in federal education law. States must spend at least 5 percent of their total allotment, about $6 billion nationwide, on such practices, along with 1 percent for summer learning opportunities and 1 percent for extended day programs.

These definitions of evidence quality follow those provided in the federal Every Student Succeeds Act (ESSA):

- **Strong evidence**, the highest level, requires randomly assigning groups of similar students to receive an intervention or to continue as usual. The experiment must involve at least 350 students across several sites.
- **Moderate evidence** allows for comparisons of similar groups without random assignment. For instance, if some schools use a new tutoring program and other schools with similar student populations do not, a comparison could generate moderate evidence of success. Studies must involve at least 350 students across several sites.
- **Promising evidence** provides a correlation to positive results, without requiring as much similarity among comparison groups. The promising rating can also be applied to a more rigorous study that doesn't have enough students or sites to qualify for a higher rating.
- FutureEd also acknowledges a lower level of evidence, not included among ESSA's definitions, which we call **emerging evidence**. Emerging evidence requires a rationale or logic model based on research to suggest that the intervention can yield positive results. In some cases, the intervention may be too new to have the support of rigorous study, through there may be evidence from a similar study to suggest the approach might work.

In a recent commentary for FutureEd, Nora E. Gordon of Georgetown University laid out the three steps required for using this lowest level of evidence: 1) explain the reasoning for how the intervention would improve outcomes; 2) cite "high-quality research findings or positive evaluation" that provide the basis for that reasoning; and 3) engage in "ongoing efforts to examine the effects of such activity, strategy, or intervention."

These four levels of evidence give schools and districts wide latitude to adopt interventions that can help students recover academically and socially from the damage done by the pandemic. Implemented effectively, these proven practices can provide substantial returns on educators' Covid-relief investments.

EXPANDED LEARNING TIME

Summer Learning Strategies

The American Rescue Plan requires states to spend at least 1 percent of the money allotted for K-12 schools—about $1.2 billion nationwide—for summer learning programs to help students make up lost instructional time. Research shows that well-designed summer programs can lead to gains in reading and math and support the social and emotional development of students who attend regularly. Since the start of the pandemic, student absenteeism rates have spiked across the country and across different learning modes, with the most vulnerable students missing many more school days than in years past.

THE RESEARCH

In April 2021, Brown University's Annenberg Institute released a **meta-analysis** of 37 studies of summer programs in math for students in pre-K through twelfth grades. They found an average weighted impact of +.1 standard deviations for standardized mathematics achievement tests when the outcome was restricted to these tests and +.09 standard deviations for social-emotional learning and behavioral outcomes. The authors equate the magnitude of the academic impact to a $5,000 increase in the future earnings of each student who attended a program. They note through a cost-benefit analysis that the payoff of summer school in student achievement gains may be 40 percent greater than the payoff from reducing class sizes by one-third.

Beth Schueler of the University of Virginia's Curry School of Education conducted a **field experiment** in 2020 examining the causal effect of "Vacation Academies," or week-long school break programs for sixth- and seventh-graders in Massachusetts. Academy Leaders nominated students who struggled with test-taking, attendance, and discipline. However, students with records of chronic absenteeism or extreme behavioral issues were generally not included, to avoid disruptions to the program. Schueler found program attendance increased the probability of a student scoring proficient or higher on Common Core-aligned math exams by 10 percentage points.

The RAND Corporation has **evaluated** voluntary full-day summer learning programs in Boston, Massachusetts; Dallas, Texas; Duval County, Florida; Pittsburgh, Pennsylvania; and Rochester, New York since 2011. Through a randomized control trial, RAND researchers found that students who were offered the five-week summer program outperformed students not offered the program on fall mathematics assessments in the first year of the program, with average gains equivalent to five weeks of in-school instruction , although no significant gains were seen in the second year. However, attendance was a key challenge in program implementation, with 20 percent of students who had been offered the program not attending in the first summer and 48 percent not attending in the second summer. Researchers found correlation evidence to suggest that gains may have been larger for students who actually attended the program for 20 or more days, with average gains equivalent to over eight weeks of in-school instruction. However, the research design did not allow researchers to be certain that additional gains were due to program attendance as opposed to other student-level factors.

WHAT TO CONSIDER

The RAND researchers suggest programs run at least five weeks and limit groups to 15 or fewer students. Programs should offer both academic and enrichment activities, provide transportation and food, and work with community and other family-facing organizations to encourage high attendance. Given that regular attendance is key to securing positive results, programs should develop strategies to encourage students to show up. Researchers from Brown University's Annenberg Institute also found programs exclusively focused on math had a greater impact on math achievement.

RESEARCH

- The Impact of Summer Learning Programs on Low-Income Children's Mathematics Achievement: A Meta-Analysis: **INCLUDES STRONG AND MODERATE STUDIES**
- Making the Most of School Vacation: A Field Experiment of Small Group Math Instruction: **MODERATE**
- Every Summer Counts: A Longitudinal Analysis of Outcomes from the National Summer Learning Project: **STRONG**

RESOURCES

- Designing Summer Programs That Students Want to Attend
- A Summer For Learning & Recovery

Extended Day Programs

The American Rescue Plan requires states to spend at least 1 percent of the money allotted for K-12 schools—about $1.2 billion nationwide—for extended day programs that can help students make up for lost instructional time during the Covid pandemic. Research is mixed on whether creating a longer school day improves academic outcomes, with results often hard to distinguish from other school-wide reforms. Not surprisingly, research into afterschool programs finds that students make the greatest gains in academic performance, attendance and social-emotional skills when they attend the programs regularly.

THE RESEARCH

A 2007 study by researchers from the University of California, Irvine, and Policy Studies Associates, Inc., followed 3,000 low-income, ethnically diverse students from eight states in six major metropolitan centers and six smaller urban and rural locations. The researchers found that regular participation in afterschool programs was associated with gains of 20 percentage points in math achievement test scores for elementary students and 12 percentage points for middle school students over two years, when compared to students who dropped into programming but were not consistently supervised. Elementary and middle school students who regularly attended programs also saw improvement in self-reported work habits and reductions in misconduct.

Another 2007 study by researchers at Chapin Hall Center for Children at the University of Chicago analyzed Chicago's After School Matters program, which is the largest of its kind to offer students in some of Chicago's most underserved schools paid internships. They found students who participated in at least 27 of 30 possible program days missed two fewer days of school compared to those who did not participate. Researchers also found participants were nearly 50 percent less likely to fail courses than those who did not participate and nearly three times more likely to graduate.

WHAT TO CONSIDER

Because results are more promising when students attend afterschool programs regularly—at least two to three days a week—schools and districts should consider ways to increase participation, including partnering with community organizations and offering food, transportation, and other basic needs. Programs should also consider engaging government leaders, private funders, higher education, and local businesses to share information on achievement and attendance with school districts. Afterschool programs serving 10 to 20 students and offering 70 to 130 hours of additional instructional time annually are most effective, but programs that offer 44 to 100 hours annually are also likely to have an impact.

RESEARCH

- Outcomes Linked to High-Quality Afterschool Programs: Longitudinal Findings from the Study of Promising Afterschool Programs: **PROMISING**
- After-School Programs and Academic Impact: A Study of Chicago's After School Matters: **PROMISING**

RESOURCES

- Building Workforce Skills Afterschool
- This is Afterschool
- Evidence-Based Considerations for COVID-19 Reopening and Recovery Planning: Afterschool Coordination Systems to Support Afterschool Programming
- Expanded Learning Time as a Strategy to Solve Unfinished Learning

Tutoring

The American Rescue Plan requires states to spend at least 5 percent of the money allotted for K-12 schools—about $6 billion nationwide—on helping students make up for lost instructional time. Similarly, local school districts must spend at least 20 percent of their allocation on this objective. High-impact tutoring is an evidence-based strategy proven to boost academic achievement, social-emotional development, and other outcomes. While tutoring can take many forms and often includes a mentoring component, Brown University's National Student Support Accelerator **defines** high-impact tutoring as "a form of teaching, one-on-one or in a small group, toward a specific goal" that supplements, but does not replace, classroom instruction.

THE RESEARCH

A 2020 **meta-analysis** by the Abdul Latif Jameel Poverty Action Lab in Cambridge, Massachusetts, found that tutoring programs regularly produce large improvements in student academic outcomes. The Lab reviewed 96 randomized experiments and determined the average effect of tutoring was a 0.37 standard deviation increase in student learning, or the equivalent of a student moving from the 50th percentile to almost the 66th percentile of achievement.

In a 2017 **meta-analysis** by SFI, the Danish National Centre for Social Research, researchers analyzed 101 studies, 76 percent of which were randomized controlled trials, on different academic interventions for students of low socioeconomic status in OECD and European Union countries between 2000 and 2014. The researchers found the average effect of high-impact tutoring to be 216 days of additional learning in math and English language arts.

And in a 2013 **study**, Matthew A. Kraft, then at the Harvard Graduate School of Education, found positive results after MATCH Charter Public High School began offering a two-hour block of tutoring during an extended school day. Kraft compared the achievement rates for students receiving tutoring to students at other Boston charter schools and found the average impact equal to 90 to 150 additional learning days of English language arts.

Tutoring can improve attendance as well as academic achievement in the early grades. In Milwaukee's **SPARK Literacy Program**, kindergarten, first- and second-grade students with tutors had on average six fewer absences a year, according to a University of Wisconsin study. They also saw significant gains in reading achievement and literacy when compared to similar students not chosen for the program. The gains were greatest for children who needed the most help: 62 percent of participants who started the program below literary benchmarks for their grade ended up meeting those benchmarks.

WHAT TO CONSIDER

Analysis from FutureEd, Education Reform Now, and the Center for American Progress finds **tutoring** to be most effective when it meets the following conditions: occurs during the regular school day; includes at least three sessions per week for the duration of the school year; occurs in groups of four or fewer students; have students work with the same tutor over time; provides tutors with

pre-service training, oversight, ongoing coaching, and clear lines of accountability; uses data to inform tutoring sessions; uses materials aligned with research and state standards.

In a 2021 study combining four recent meta-analyses, Brown University researchers Matthew A. Kraft and Grace T. Falken found tutoring programs produced a greater average effect on student achievement than other popular interventions such as class size reduction, vacation academies, extending the school day or year, and summer school. Kraft and Falken suggest using a tiered tutoring structure, with high school students tutoring elementary school students as an elective course, college students tutoring middle school students as a federal work-study job, and recent college graduates tutoring high school students as full-time tutors.

RESEARCH

- The Transformative Potential of Tutoring for Pre K-12 Learning Outcomes; Lessons from Randomized Evaluations: **STRONG AND MODERATE STUDIES**
- Academic Interventions for Elementary and Middle School Students with Low Socioeconomic Status: A Systematic Review and Meta-Analysis: **STRONG AND MODERATE STUDIES**
- How to Make Additional Time Matter: Integrating Individualized Tutorials into an Extended Day: **MODERATE**
- SPARK Literacy Program Evaluation: **STRONG**

RESOURCES

- State Guidance for High-Impact Tutoring
- The Case for a National Student Tutoring System
- A Blueprint for Scaling Tutoring Across Public Schools
- The Ingredients of Successful Tutoring Programs
- Relationships Matter Toolkit
- National Student Support Accelerator

Mentoring

Congressional Covid relief funding can be used to help students make up for lost instructional time through summer learning, afterschool programming, tutoring, and more. Mentoring programs are another evidence-based intervention. The National Mentoring Resource Center describes **mentoring** as one-to-one, group, or team environments that offer a variety of activities aimed at academic gains, improvements in school connectedness, attendance, and goals such as personal growth, artistic expression, future planning, and goal setting. Often a component of other interventions like tutoring, mentoring has been shown to boost academic achievement and social-emotional development.

THE RESEARCH

Researchers at the University of Munich, Kiel University, Catholic University, and Eichstaett-Ingolstad in Germany randomly assigned 153 eighth- and ninth-graders to a mentoring program staffed by university students. The researchers found that participation in the program closed more than half of the math achievement gap between lower-income students and their more affluent peers. Further, the researchers found that program participation improved patience and social skills for lower-income students, as reported in their 2021 **study**.

In June 2020, researchers from the University of Bonn, LMU Munich, and the University of Cologne **explored** the impact of low intensity mentoring on long-term education outcomes for German students. They found that after one year of mentoring by highly skilled mentors, lower-income students were 20 percent more likely than their un-mentored peers to enter rigorous academic programs rather than vocational, or low-track, programs.

Check & Connect, a student-engagement intervention developed in the 1990s, trains and deploys mentors to monitor at-risk students for early warning signs of leaving school. The program is listed in the U.S. Institute of Education Sciences **What Works Clearinghouse** as an evidence-based approach for dropout prevention. A University of Minnesota **study** of elementary students with problematic attendance found that 40 percent of students receiving Check & Connect services were engaged in class and regularly attending school after two years in the program—an improvement of 135 percent over baseline behavior—while 86 percent were engaged and arrived at school on time—an improvement of 104 percent over baseline behavior.

In 2018, Johns Hopkins University researchers Robert Balfanz and Vaughan Byrnes released a **study** demonstrating the impact of NYC's Success Mentor Corps Program on students who were chronically absent the prior school year. Students who received individual mentoring along with other attendance interventions gained almost two additional weeks (nine days) of school a year when compared to similar students who did not receive mentoring. High school students who improved their attendance also saw a slight increase in their grades and were less likely to leave school in the following years.

In Chicago, a group program known as Becoming a Man brings together mentoring and tutoring in after school sessions. The program helps students work on self-reflection, problem-solving, and relaxation strategies, as well as offering opportunities to try boxing and other sports. The participants receive math tutoring through MATCH Education. A 2014 **study** led by Duke University

researcher Philip C. Cook found that students involved in the experiment showed significant academic benefits and gained 13 additional days of attendance, compared to similar students who were not involved.

WHAT TO CONSIDER

Both tutoring and mentoring offer students a connection to a caring adult at school, a key to student success. The New York City program that Balfanz and Bynes studied included mentors drawn from the school staff, community-based organizations, and, in some cases, older students. In all cases, the results were strongest when mentors were in school at least three days a week; worked with a defined, managed caseload; had access to student data; and had a voice at a weekly principal-led meeting. Covid relief money could be used to launch a mentoring program and provide the necessary training and background checks.

RESEARCH

- Can Mentoring Alleviate Family Disadvantage in Adolescence? A Field Experiment to Improve Labor-Market Prospects: **STRONG**
- Mentoring and Schooling Decisions: Causal Evidence: **STRONG**
- Addressing Student Engagement and Truancy Prevention During Elementary Years: A Replication Study of the Check & Connect Model: **STRONG**
- Using Data and the Human Touch: Evaluating the NYC Inter-Agency Campaign to Reduce Chronic Absenteeism: **PROMISING for ENTIRE CAMPAIGN**
- The (Surprising) Efficacy of Academic and Behavioral Intervention with Disadvantaged Youth: Results from a Randomized Experiment in Chicago: **PROMISING**

RESOURCES

- The Mentoring Effect
- Relationships Matter Toolkit
- What Research Says About School-Based Mentoring
- Student Success Planning with Adult Navigators

Combating Chronic Absenteeism

Since the start of the pandemic, student absenteeism rates have spiked across the country and across different learning modes, with the most vulnerable students missing many more school days than in years past. Left unaddressed, this absenteeism crisis threatens to deepen the longstanding achievement gaps in public schools and undo efforts to improve outcomes for disadvantaged students. The American Rescue Plan stresses the importance of reducing chronic absenteeism and helping students make up for lost instructional time. Fortunately, there are a number of evidence-based interventions that specifically target absenteeism.

THE RESEARCH

Some absenteeism interventions focus on messaging and engagement, such as attendance communications campaigns, contests, and incentives. While there is anecdotal evidence for the success of these efforts, they lack a strong research base. However, one messaging approach—attendance notifications, or "nudges"—has been found in two high-quality studies to reduce absenteeism and even course failures by letting parents know how many school days their children have missed.

In a 2018 study, Harvard University behavioral scientist Todd Rogers and University of California, Berkeley public policy researcher Avi Feller reported improvement in attendance rates after sending five postcards to the families of high-risk students. The intervention reduced total absences by 6 percent and the share of students who were chronically absent by 10 percent, when compared to similar students not involved in the study.

A 2019 study by Peter Bergman of Teachers College, Columbia University, and Eric Chen of Babson College took another successful approach. The researchers texted weekly updates to parents, alerting them to any missed assignments or absenteeism. Course failures dropped by a striking 27 percent and class attendance rose by 12 percent among students whose families received texts, compared to similar students.

A separate set of interventions addresses the reasons students miss school. Health initiatives, especially those aimed at reducing asthma attacks, have been linked to better attendance (see School-Based Health Services page 38). Likewise, several school climate initiatives have shown promise in reengaging students and improving attendance (see Student Motivation page 30).

Some cities have seen substantial improvements in absenteeism by addressing transportation challenges, a key barrier to attendance. A 2015 study by University of Minnesota researchers found that Minneapolis students who received free passes for public transit had absenteeism rates 23 percent lower than their peers who didn't participate. The benefits were most pronounced for students from low-income or single-parent families, as well as Black and immigrant students.

Free schoolwide breakfasts have also increased attendance. A 1998 study led by Michael Murphy of Massachusetts General Hospital found that such programs, aimed at reducing hunger, also led to better academic results and lower rates of absenteeism and tardiness when implemented in public schools in Baltimore and Philadelphia.

The universal breakfast approach has the added benefit of removing the stigma from children who rely on school for their meals. Likewise, a 2015 Tufts University study of a Breakfast in the Classroom program in 446 urban elementary schools found a slightly higher attendance rate for students involved in the program, reflecting 76 additional attended days per grade each month.

WHAT TO CONSIDER

In recent guidance on spending Covid relief aid, the Education Department specifically mentions improving attendance, stressing the need for data systems that track absences and monitor the results of interventions. Early warning systems, which typically include an attendance metric, have proven effective at improving graduation rates (see Early Warning page 14). The influx of federal funding can provide the support needed to launch such systems and train staff members to use them..

Attendance interventions work best in a tiered system of supports, with universal messaging and engagement initiatives aimed at the entire student body, more targeted approaches for students with particular attendance challenges, and case management for students who need support from agencies beyond the schoolyard.

RESEARCH

- Reducing Student Absences at Scale by Targeting Parents' Misbeliefs: **STRONG**
- Leveraging Parents: The Impact of High-Frequency Information on Student Achievement: **STRONG**
- Assessing the Impact of Student Transportation on Public Transit: **PROMISING**
- The Relationship of School Breakfast to Psychosocial and Academic Functioning: **PROMISING**
- Estimating Impacts of a Breakfast in the Classroom Program on School Outcomes: **PROMISING**

RESOURCES

- Present Danger: Solving the Deepening Student Absenteeism Crisis
- Safe Routes to School Toolbox
- Breakfast and Learning: An Updated Review
- Fact Sheet: School Breakfast Program

FAMILY AND COMMUNITY ENGAGEMENT

Early Warning Systems

As money pours in from the American Rescue Plan to help students make up for lost learning time, schools and districts must find reliable ways to track which students need extra support. Researchers in Chicago and Baltimore have identified three signs that students are headed off track for graduation. These warning signs, which can emerge as early as middle school, are chronic absenteeism, suspensions for misconduct, and failure rates in key courses. Typically, school data teams review trends in student records to identify individuals who are becoming disengaged and falling behind in the credits needed for graduation. Educators then intervene and monitor those students' progress. Research shows that setting up digital early warning systems to track these indicators can improve students' attendance and achievement.

THE RESEARCH

Through the Regional Education Laboratory Midwest, the American Institutes for Research **randomly assigned** some middle schools in Pennsylvania to implement an early warning system during the 2014-15 school year. After one year of implementation, schools with the system had a four percentage-point drop in the number of chronically absent students and a five percentage-point drop in course failures, compared to schools without the system.

Ninth grade seems to be a critical year: The University of Chicago Consortium on Chicago School Research worked with Chicago Public Schools to help keep ninth-graders **on track** for graduation. They began with data reports on attendance, behavior, and grades helping high school administrators and teachers identify at-risk students. Schools developed their own responses to help students flagged by the system, included mentoring, summer institutes and reaching out to families when students were absent.

Between 2007 and 2014, the percentage of ninth-graders on track for graduation rose from 57 percent to 82 percent across the school district. The researchers took a deeper look at 20 high schools to see if the gains at ninth grade were sustained. They found that the positive impact of the schools' responses persisted through high school and led to higher graduation rates, with increases ranging from eight to 20 percentage points depending on the school.

WHAT TO CONSIDER

Early warning systems may be particularly helpful in supporting students with disabilities and those at risk of dropping out. School districts can spend Covid relief dollars to set up and manage data systems and train staff members to interpret data. To avoid implementation challenges, schools and districts should dedicate staff to the project who have experience using data and are unlikely to leave their positions. If no staff is available, schools and districts should partner with a local university or recruit community volunteers with relevant experience. Each school should create an early warning team to review the data at least every two weeks and recommend action to support students.

RESEARCH

- Getting Students on Track for Graduation: Impacts of the Early Warning Intervention and Monitoring System After One Year: **MODERATE**
- Preventable Failure: Improvements in Long-Term Outcomes When High Schools Focused on Ninth Grade: **PROMISING**

RESOURCES

- Early Warning System: How to Prevent Reading Disabilities
- Dropout Prevention: Early Warning Indicator Systems
- Early Warning Intervention and Monitoring System Seven Step Process
- A Practitioner's Guide to Implementing Early Warning Systems
- Addressing Early Warning Indicators

Home Visits

During the pandemic, home visits became an essential way for schools to connect with families. What started as an effort to distribute devices and WiFi hotspots morphed into a broader campaign to engage parents and locate students who were not participating in remote learning or had not enrolled in school at all. Research provides strong evidence that home visits can improve student attendance and achievement. The practice can also be a key step toward developing a broader family engagement framework.

THE RESEARCH

An evaluation of the Parent Teacher Home Visits program found that students whose families received at least one teacher visit a year were 21 percent less likely to be chronically absent than other students. When 10 percent or more of a school's students received home visits, the positive impact on absenteeism extended to the entire school. According to a 2016-17 school year study by Steven Sheldon of Johns Hopkins University, students attending these schools were more likely to achieve proficient scores on English language arts assessments than their peers at other schools. Sheldon looked at school year results for more than 100,000 students in kindergarten through eighth grade in four large, urban school districts.

An earlier study of 12 Washington, D.C. public schools by Johns Hopkins University in the 2013-14 school year found students whose families received home visits were more likely to read at grade level and less likely to be chronically absent. In North Carolina, a pilot program combined home visits with dedicated cell phones for reaching parents of first- and second-grade students, among other interventions. The program reduced the prevalence of frequent absences by about 10 percent and improved communication between parents and teachers, according to a 2017 Duke University study.

The Parent Teacher Home Visits program began in the Sacramento area two decades ago and now operates at more than 700 sites in 25 states. The model relies on some basic practices: voluntary visits arranged in advance with pairs of teachers; trained and compensated teachers; and a focus on relationship-building.

WHAT TO CONSIDER

Home visits can be part of a shift toward engaging parents and caregivers as full partners in education. This is especially important for low-income families of color, who often have less contact with their children's schools for a range of reasons, including employment obligations and a lack of transportation.

Home visits entail some costs, as teachers should be trained and compensated for visits that typically occur outside of school hours. The visits seem to work best with families of elementary school children and when teachers and parents continue to interact after the initial visit. Schools have found the intervention particularly helpful with families of English language learners.

In the most successful home visits, teachers meet with parents and caregivers with the goal of engaging them around their child's education. The first visit is focused on building a relationship. Teachers ask about the family's

"hopes and dreams" for the child and learn about the challenges the family faces. They provide a connection to the school for parents who might not otherwise reach out. Relationship-building home visits are not designed to deliver explicit messages about absenteeism or achievement.

School districts should consult with local health departments to ensure that home visits can be conducted safely during the pandemic. If not, virtual home visits have shown success in connecting teachers and families, according to Parents as Teachers, a parent engagement groups with its own home visiting model.

RESEARCH

- Student Outcomes and Parent Teacher Home Visits: **PROMISING**
- The Family Engagement Partnership Student Outcome Evaluation: **PROMISING**
- A New Program to Prevent Primary School Absenteeism: **PROMISING**

RESOURCES

- Relational Parent Teacher Home Visits Boost Attendance

Community Collaborations

The pandemic demonstrated the need for schools to collaborate with other community agencies and organizations to deliver a full range of services to students and families. Covid relief spending can support such collaborations, including data-sharing agreements. This is particularly important for students facing complex problems—such as homelessness, pregnancy, and mental illness—who require coordination and case management across public agencies.

THE RESEARCH

Many communities use the **Full-Service Community Schools** model to provide multi-agency wraparound services and essentially turn schools into hubs providing health, employment and social services for the entire community. In 2014, New York City spent $52 million to create 45 Community Schools, a number that has since grown to 200. A 2020 RAND Corporation **study** of the first three years of the initiative found that the model led to reductions in chronic absenteeism in all grades and across all years of the study, as well as a decline in disciplinary incidents at elementary and middle schools. Graduation rates improved, and math achievement rose significantly in the final year of the study.

Communities in Schools (CIS) **offers** another model for encouraging interagency collaboration. Like Community Schools, the nonprofit provides a school-based coordinator and a school support team to evaluate the needs of students and families. The most vulnerable students receive intensive case management. A 2017 MDRC evaluation of **two years** of case management by CIS found improvements in students' attitudes about school and relationships with teachers and peers, but no significant progress in achievement, attendance or behavior. Results were slightly better for students whose participation began in transition years, such as sixth and ninth grades.

Some communities have developed "cradle-to-career" partnerships that track a key set of education outcomes from infancy to adulthood. **StriveTogether**, a nonprofit based in Cincinnati that has networks in 70 communities, is developing guidance for collecting and reporting on an additional set of system indicators focused on racial equity.

Impact Tulsa, a StriveTogether network member, **focuses** on data to help educators understand the factors outside of the classroom that influence student success. It connects individual data on student outcomes from 21 school districts (including attendance, grades, and suspensions) with census-tract data on neighborhoods in four domains: neighborhood poverty and education levels; neighborhood health; and neighborhood access to such assets as schools, parks, trails, transit, and grocery stores. The school district has used the index to identify areas where schools and their community-based partners need to work more closely to eliminate barriers to student success.

At the state level, many states are developing Children's Cabinets—intragency partnerships across such fields as education, health, human services, and juvenile justice—to coordinate service delivery for vulnerable students.

WHAT TO CONSIDER

The pandemic has underscored the value of schools as community hubs, with schools providing meals and connecting students and families to healthcare and other resources. These collaborative approaches work best with a school-based coordinator at the helm. Full-service community schools can be funded with federal grants available under Title I of the Every Student Succeeds Act. Covid relief funding can cover the coordinator's salary and support convening partners, as well as help to develop data systems key for sharing information (see Early Warning Systems page 16). Community-based projects such as afterschool or mentoring programs need access to attendance records, grades, disciplinary records and other information. This naturally raises privacy concerns that may require memoranda of understanding between districts and outside agencies. The federal government provides guidance on navigating these issues.

RESEARCH

- Illustrating the Promise of Community Schools: **MODERATE**
- Two Years of Case Management: **PROMISING**
- Breakfast in the Classroom Linked to Better Breakfast Participation, Attendance: **PROMISING**

RESOURCES

- FERPA Guidance for Sharing Information with Community Based Organizations
- Strive Together Collaborative Improvement

TEACHERS AND TEACHING

Innovative Staffing Models

With schools closed during the pandemic, many educators developed innovative strategies for delivering instruction. Some created multi-teacher teams with one teacher leading the lessons and others working closely with struggling students. Others reorganized schedules to provide more time for teachers to collaborate on planning lessons and analyzing student work. Covid relief funding could help states and districts bring these innovative models to more schools and train teachers how to work within the new frameworks.

THE RESEARCH

Research suggests that closer collaboration among teachers can improve instructional practices and, in some cases, student achievement. In **Opportunity Culture** schools, lead teachers teach part-time and also lead small, collaborative teams of two to eight teachers, paraprofessionals, and teacher residents in the same grade or subject. Their duties include clarifying the roles and responsibilities of each team member based on their strengths; leading the team in analyzing student data to target and adjust instruction; leading teacher development through lesson planning, co-teaching, modeling, and individual feedback; and providing input on principal evaluations of team members. A rigorous third-party **evaluation** by the National Center for Analysis of Longitudinal Data in Education Research, or CALDER, found that the implementation of such teams was associated with sizable math gains for students. However, researchers could not be certain whether the math gains were the direct effect of the teacher teams or attributable to other school improvement efforts.

More definitive evidence of student achievement gains emerged from a Tennessee study led by Brown University researcher John P. Papay. Papay paired teachers who had done well on specific domains within an evaluation rubric with peers who had struggled. Schools were randomly assigned to the teacher-to-teacher model or continued as usual. The paired teachers were encouraged to work together on improving teaching skills identified by the evaluation data. By year's end, the average student in a school with paired teachers scored higher on math and reading tests than the average student in a control school. This finding held whether or not the student's teacher had participated in a partnership, according to a 2016 working **paper**. These improvements persisted, and even grew, in the school year following treatment.

Improved achievement also comes with teachers observing and evaluating each other's instructional style, according to a 2020 **study** by researchers from Harvard University and England's Oxford Partnership for Education Research and Analysis and University of Bristol. The researchers randomly assigned teachers in British schools to observe or be observed by their colleagues while teaching. Students in the observation schools scored higher on math and English exams compared to students in the comparison schools.

While these results are promising, a **meta-analysis** of 60 teacher-coaching studies led by Brown University's Matthew A. Kraft found improvement in instructional practices, but not consistent improvements in student achievement.

WHAT TO CONSIDER

To ensure teachers are committed to the idea of learning through peer feedback, schools and districts should seek buy-in from educators before pursuing multi-teacher teams or teacher coaching arrangements. In some places, these new arrangements may require adjusting union contracts. Typically, team leaders receive higher pay for the increased responsibilities they assume. Covid relief money could support extra pay for leadership, as well as training for the educators using these models.

RESEARCH

- Reaching Further and Learning More? Evaluating Public Impact's Opportunity Culture Initiative: **PROMISING**
- Learning Job Skills from Colleagues at Work: Evidence from a Field Experiment Using Teacher Performance Data: **STRONG**
- Teacher Peer Observations and Student Test Scores: **STRONG**

RESOURCES

- Teaching Innovation: New School Staffing Strategies Inspired by the Pandemic
- Multi-Classroom Leadership
- The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence

Teacher Mindset Training

The way teachers treat students, and their beliefs and biases about students' abilities, have a profound impact on student well-being and achievement. Students who feel respected and supported by their teachers demonstrate greater confidence in their ability to learn and are more motivated to tackle demanding classwork. For students transitioning back to classrooms and readjusting to school routines post-pandemic, strong, supportive relationships with teachers will be especially important.

THE RESEARCH

Several teacher mindset training interventions have been found to improve student performance. A 2018 study from the Stanford Graduate School of Education investigated the impact of the Mathematical Mindset Approach, which encompasses professional learning on new brain science that challenges the "math person" myth and instructional strategies for teaching math. Forty fifth-grade teachers in eight school districts in California underwent 30-40 hours of online modules as attended seven in-person meetings to learn the approach. After one year, interviews, teacher surveys, and assessment data indicated positive improvements in students' beliefs, teacher's instructional practice, and on students' math test scores. The greatest gains were from girls, English language learners, low-income students, and other students from populations typically underrepresented in advanced math classes and math professions.

The Perspectives Experience Program, or PEP, developed by psychologist Jason Okonofua and researchers at the University of California, Berkeley, is another effective intervention to address teacher bias and its impact on student outcomes. PEP enrolls teachers and students in two online modules over a span of six months. Teachers are asked to consider student perspectives and needs to shift teacher mindsets about minority students and encourage them to examine their approaches to discipline. Okonofuna and his fellow researchers reported in a 2016 study that PEP cut suspension rates in half over the course of the year. As students return to the classroom after experiencing various challenges throughout the pandemic, strategies such as PEP can help schools avoid unduly harsh disciplinary approaches.

Another teacher-mindset intervention targets the influence of teachers on students' belief in their own abilities. Teachers' subconscious biases often come out through their feedback to students. David Yeager from the University of Texas, Austin demonstrated the importance of teachers using "wise feedback" to communicate their high expectations and belief in student ability through their responses to essays and other assignments. In a 2013 study, Yeager and his colleagues found that wise feedback increased students' likelihood of revising their essays to receive a better grade through three randomized field experiments. Training teachers to give wise feedback shows promise for reducing biases in teacher response to student work and improving student achievement.

The BARR model—Building Assets Reducing Risks—has improved academic success by building teacher-student relationships and tracking student data. Under the model, schools place high school freshmen together in small groups for English, math, social studies, and science classes. Teachers get professional development on how to use their relationships with students to enhance

achievement. They also meet weekly to discuss student successes and approaches that will build stronger relationships within the groups. A rigorous 2015 study of the BARR model for the U.S. Education Department found improvements across a national sample of schools in test scores, credits earned, and grade point averages, and a decline in failure rates.

WHAT TO CONSIDER

There are several other ways schools can strengthen student-teacher relationships, including prioritizing small-group experiences for students through teacher-led "advisories." Home visits are another way to build relationships between teachers, students, and families, and potentially reduce teacher bias and enhance empathy. And Stanford Graduate School's Complex Instruction model can help combat implicit biases about which students could be successful at math by using groupwork to emphasize equal-status interactions among students and specific conditions under which teachers can establish and support these interactions.

RESEARCH

- Achieving Elusive Teacher Change through Challenging Myths about Learning: A Blended Approach: **PROMISING**
- Brief Intervention to Encourage Empathic Discipline Cuts Suspension Rates in Half Among Adolescents: **PROMISING**
- Breaking the Cycle of Mistrust: Wise Interventions to Provide Critical Feedback Across the Racial Divide: **PROMISING**
- The Building Assets Reducing Risks Program: **STRONG**

RESOURCES

- TEACHER MINDSETS: How Educators' Perspectives Shape Student Success
- Complex Instruction

Diversifying the Teacher Workforce

Research shows that diversifying the teacher workforce produces positive outcomes for all students. For students of color, having a teacher of the same race or ethnicity has been shown to improve test scores and attendance and reduce suspension rates. However, in 2015-16, teachers of color accounted for only 20 percent of U.S. public school teachers, while children of color accounted for half the student population. States and local districts can invest Covid relief aid in a range of strategies for recruiting and retaining a more diverse workforce.

THE RESEARCH

One promising strategy is to recruit teachers of color from nontraditional paths and support their transition into teaching. A 2021 study of six cohorts of new teachers by University of Florida researcher Christopher Redding found that alternate routes into teaching are associated with an increased proportion of new teachers of color in any given state. The study also found that alternate routes into teaching are associated with a 22 percentage point increase in the number of Black teachers in a state and a 6 percentage point increase in other teachers of color.

"Grow your own" programs work to recruit teaching candidates from nontraditional paths, including high school and community college students, paraeducators, after-school program staff, substitutes, and community members. A New America analysis of existing literature found that recruiting teachers "from the community for the community" increases diversity and allows for a better demographic match between teachers and students. Research also shows that teachers trained through "grow your own" programs have higher retention rates and lower rates of turnover, especially in hard-to-staff schools.

Another approach to diversifying the teacher workforce is teacher residency programs, in which candidates are partnered with an experienced mentor teacher for at least a year whom they shadow in the classroom while enrolled in coursework. Teacher residencies attract higher percentages of teachers of color than traditional teaching credential programs, according to a Bellwether Education Partners analysis. For example, 38 percent of all Boston Public School teachers identify as teachers of color, whereas 50 percent of candidates in the Boston Teacher Residency identify as teachers of color. The report also notes that candidates who go through a residency program stay in their jobs longer than teachers entering the profession through traditional pathways.

The Boston Teacher Residency, Chicago's Academy for Urban School Leadership, and New Visions/Hunter College Urban Teacher Residency all have annual retention rates above 90 percent, according to the Bellwether analysis. And they find data out of San Francisco are similar, with 80 percent of teachers from residency programs staying in the profession for at least five years, compared to 50 percent of teachers who did not participate in residency programs. Teach for America also recruits and places teachers of color at rates higher than their 20 percent representation in the nation's teaching force.

WHAT TO CONSIDER

Grow-your-own programs often partner with school districts, universities, and community colleges, and community-based organizations and provide teachers

with financial, academic, and social support. Public partnerships can help offset some of the cost of a program, which is typically between $7,000 and $22,000 with a partner. And Teach Plus finds the key components of teacher residencies to be effective mentor teachers, placing residents based on district staffing needs, the program spanning a full school year with coursework, hiring decisions based off school needs, and an onboarding procedure for after the resident leaves the program.

Efforts to retain teachers of color already in the profession are also important. One challenge, particularly during the pandemic and post-pandemic periods, is to avoid adding unpaid, often stressful responsibilities to their already demanding jobs. Seth Gershenson of American University warns that teachers of color often assume multiple roles on top of regular teaching, including disciplinarian, community liaison, and mentor.

RESEARCH

- Changing the Composition of Beginning Teachers: The Role of State Alternative Certification Policies: **MODERATE**

RESOURCES

- Recommendations for Critical Components of a Teacher Residency Program
- Why a Diverse Teaching Force Matters and How We Can Get There
- Trading Coursework for Classroom: Realizing the Potential of Teacher Residencies
- Investing In Grow Your Own Teacher Programs

Teacher Bonuses

While all our nation's children have been impacted by Covid, students in low-income communities have been hit hardest. One way to support to those students and communities is to offer teachers bonuses to work in schools with concentrated poverty, which are often hard to staff.

THE RESEARCH

A 2013 report sponsored by the U.S. Department of Education's Institute of Education Sciences (IES) studied the impact of providing incentives for high-performing teachers to move to underserved schools. IES implemented the program, known as the Talent Transfer Initiative (TTI), in 10 school districts across seven states. TTI offered the highest performing teachers (as measured by increase in student achievement in their classrooms) $20,000 over two years if they transferred and committed to teaching in schools with poor test scores.

The study found several promising outcomes. First, the transfer incentives successfully filled 88 percent of vacancies at hard-to staff-schools. Further, the initiative had a positive impact on math and reading test scores in targeted elementary classrooms, though there was not a significant impact on middle school student achievement. Lastly, there was a positive impact on teacher-retention rates during the two-year duration of the bonuses, with a 93 percent retention rate among teachers who were receiving the bonuses, compared to 70 percent among those who were not. However, after the payments stopped, the retention rate of the high-performing teachers fell to the same level as those teachers who had never received bonuses.

A 2006 study from the Sanford Institute of Public Policy at Duke University examined the impact of teacher bonuses on retention rates in low-performing North Carolina public schools. From 2001 to 2004, the program gave an annual bonus of $1,800 to certified math, science and special education teachers working in public secondary schools with either high poverty rates or low test scores. The researchers then looked at teacher turnover rates before and after implementing the bonuses and found that the bonus payment reduced mean turnover rates of the targeted teachers by 17 percent.

Similarly, a 2009 study looked at California's Governor's Teaching Fellowship (GTF) initiative, which offered $20,000 to academically talented, novice teachers who committed to teaching in a low-performing school for at least four years. Newly licensed teachers applied for the four-year program. They received the grant in full at the onset and had to pay back $5,000 per year of service not completed. The results of the study indicated that although the GTF incentive increased the probability of the recipients teaching in low-income schools, the four-year retention rates remained the same for both recipients of the incentive and other teachers, suggesting that the $20,000 bonus did attract teachers to low performing schools but did not have a significant effect on teacher retention. While the study cannot be rated under ESSA's tiers of evidence because it does not measure impact on student outcomes, the intervention was effective for recruiting, but not retaining, teachers.

WHAT TO CONSIDER

The results of these studies are mixed regarding student achievement, and it is important to note that teachers often leave after the minimum period required for a bonus. Policymakers may want to use teacher bonuses to target high priority but short-term instructional needs in low-income communities, such as additional math and reading specialists during the post-pandemic period. Another concern is that other district schools may suffer if they lose their best teachers to incentive programs. Further, if the teachers receiving extra pay do not make a long-term commitment to their new schools, teacher bonuses can wind up contributing to turnover.

RESEARCH

- Transfer Incentives for High Performing Teachers: Final Results from a Multisite Randomized Experiment: **STRONG FOR POSITIVE IMPACT ON ELEMENTARY SCHOOL READING OUTCOMES**
- Would Higher Salaries Keep Teachers in High-Poverty Schools? Evidence from a Policy Intervention in North Carolina: **MODERATE FOR INCREASING RETENTION FOR MIDDLE AND HIGH SCHOOL MATH, SCIENCE, AND SPECIAL EDUCATION TEACHERS**
- Do Financial Incentives Help Low-Performing Schools Attract and Keep Academically Talented Teachers? Evidence From California

High-Quality Curricula

Giving students access to high-quality curricula and in the hands of well-supported teachers can have a powerful influence on learning outcomes. Lost and interrupted learning during the pandemic makes now the perfect time to provide all students with grade-level, content-rich instructional materials. States and districts can use Covid relief money to purchase materials and train teachers and staff to use them.

THE RESEARCH

Research shows that switching to a high-quality curriculum can boost student achievement more than other popular interventions, such as decreasing class size or offering teachers merit pay. Moreover, upgrading instructional materials is a relatively low-cost, high-return investment. The Center for American Progress found that the average cost-effectiveness ratio of switching to a high-quality curriculum was almost 40 times that of class-size reduction. Researchers used price data for instructional materials from the U.S. Department of Education's Institute of Education Sciences' randomized controlled trial on math curricula, along with a cost-benefit framework developed by Tulane University economist Doug Harris in 2009.

A recent study from The New Teacher Project and Zearn looked at aggregated data from over two million students in 100,000 classrooms who used Zearn's K-5 online math platform during the 2020-21 school year. Researchers found students who experienced content from the previous grade woven into the content for the new grade struggled less and learned more than students who started at the same level but received remediation. The approach was particularly effective for students of color and students from low-income families.

A 2016 study by Northwestern University's C. Kirabo Jackson and Alexey Makarin assessed the impact of high-quality, off-the-shelf online lessons, combined with teacher training in the new materials, on student outcomes. Jackson and Makarin randomly assigned math teachers in grades six through nine in three Virginia school districts to three groups: those with full access to the curriculum and training; those with access only to the curriculum; and those using the same curriculum they had previously used. Students of teachers in the first group showed improvement similar to moving from an average teacher to one at the 80th percentile of quality, or reducing a class size by 15 percent. Math assessment scores were also almost 8 points higher for students with teachers in the first group, and almost 3 points higher for students with teachers in the second group, compared to those whose teachers used the standard curriculum.

Another curricular approach that has led to better achievement is introducing culturally relevant materials for students of different races and ethnicities. Stanford University's Thomas S. Dee and the University of California, Irvine's Emily K. Penner studied the causal effects of a San Francisco ethnic studies curriculum in a 2017 paper. Schools assigned eighth-grade students with GPAs below a threshold to take an ethnic studies course. Dee and Penner used students with GPAs just above the threshold as a comparison group and found that for students assigned to the course ninth-grade attendance increased by 21 percentage points, grade point averages by 1.4 grade points, and credits earned by 23 credits.

WHAT TO CONSIDER

The adoption of high-quality materials should be accompanied by curriculum-based professional development for teachers. Findings from the 2019 American Instructional Resources Survey by the RAND Corporation found that teachers who reported receiving more evaluative feedback and helpful professional learning on curriculum reported greater engagement in standards-aligned classroom practices among all or nearly all of their students.

School districts trying to identify high-quality, standards-aligned curricula don't have to start from scratch. EdReports, an independent nonprofit, provides educator-reviewed reports on the quality of more than 70 English Language Arts and math programs. States such as Delaware, Louisiana, Massachusetts, Mississippi, Nebraska, New Mexico, Rhode Island, Tennessee, and Wisconsin also have created resources to help districts identify and select high-quality materials.

RESEARCH

- The Hidden Value of Curriculum Reform: Do States and Districts Receive the Most Bang for Their Curriculum Buck?: **DRAWS ON STRONG STUDIES AS WELL AS COST DATA**
- Accelerate, Don't Remediate: New Evidence from Elementary Math Classrooms: **PROMISING**
- Can Online Off-the-Shelf Lessons Improve Student Outcomes? Evidence from a Field Experiment: **STRONG**
- The Causal Effects of Cultural Relevance: Evidence from an Ethnic Studies Curriculum: **PROMISING**

RESOURCES

- How Instructional Materials Are Used and Supported in U.S. K-12 Classrooms
- EdReports
- Curriculum Implementation Guide
- Curriculum Support Guide
- Successful Implementation of High-Quality Instructional Materials: 5 Case Studies

SCHOOL CLIMATE

Student Motivation

The pandemic has left many students disconnected from school and apathetic about learning. A key challenge in the new school year will be motivating these students to reengage with their teachers, their peers, and their coursework. While motivation is key to academic achievement, programs focused on the nonacademic needs of students may be most helpful in restoring their motivation. Many education leaders are developing plans to meet these needs, using a range of proven engagement interventions. A 2017 RAND Corporation review identified 60 such programs that meet ESSA's top three evidence standards. Many of these programs help students strengthen skills essential to academic motivation. These include the ability to self-identify and self-assess as learners, which helps students appreciate their existing abilities as well as the purpose and value of lessons. Also vital are skills related to emotional regulation and social interaction, which feed into a sense of connection and belonging at school.

THE RESEARCH

One key to academic motivation is convincing students that academic work is relevant to their lives. In a 2009 study, Virginia-based researchers Chris Hulleman and Judith M. Harackiewicz describe a simple intervention designed to help students make this connection. Hulleman and Harackiewicz measured a group of high school student's success expectancies and initial interest in science at the beginning of the semester and their interest in science and future plans for related courses at the end. They asked a portion of the group to write about how the topics they learned in science class were valuable to their lives. A second group simply wrote summaries of what they learned. The study results showed that students who had low expectations for their success in science became more interested in the subject and earned higher grades when they wrote about the value of scientific topics, as compared to the students who wrote summaries. This intervention has been replicated with thousands of students from middle school, high school and college. In each study, writing about the value of academic subjects improves student motivation and boosts achievement.

Another key to academic motivation is building students' self-confidence as learners. Research demonstrates that a student's mindset toward learning—the belief that they can (or can't) handle challenging coursework—can influence academic success. A simple, low-cost intervention has shown promise in helping students achieve a growth mindset, according to a 2019 study led by University of Texas researcher David Yeager. The National Study of Learning Mindsets asked students from a randomly selected, nationally representative sample of 12,000 ninth-graders to complete two online activities.

In the first, students read information about how the brain can be developed like a muscle through hard work. In the second, they wrote letters to future students sharing what they had learned about the brain. The results showed that students who completed the two activities were more likely to develop a growth mindset and earn a higher grade-point average at the end of freshman year than students who did not participate.

A sense of connection and belonging at school can also boost student motivation. Students without connections to friends or teachers often feel out of place in the classroom. This is also true for non-White students who

infer they aren't respected or wanted at school. Over time these inferences can erode student well-being and success, as misconduct is more common among students who lack trust in teachers and administrators.

Reassuring students they are valued and respected can lead to better engagement and outcomes, according to a 2019 study led by Stanford University's J. Parker Goyer. In one experiment at middle schools with large Latinx populations, seventh-grade boys read letters from older students about their challenges with belonging and with the academic transition to middle school. The seventh-graders then wrote their own letters for the following year's class. The researchers combined this belonging exercise with a growth mindset intervention, as well as an effort to have the boys affirm their values. The combined interventions led to a 57 percent decline in disciplinary cases for Latino boys, compared to their peers in similar classrooms. A second study, in a school with a large Black population, tested the social-belonging aspect with sixth-graders and found a 65 percent decline in disciplinary citations for Black boys, particularly in subjective categories like insubordination. Over seven years, it narrowed the discipline disparity with White boys by 75 percent.

WHAT TO CONSIDER

Before school districts choose an intervention or social-emotional learning program, they should assess the needs of their students and staff. School climate surveys can provide detailed information on student mindsets and sense of belonging, as well as the safety and health of the school climate.

RESEARCH

- A National Experiment Reveals Where a Growth Mindset Improves Achievement: **STRONG**
- Promoting Interest and Performance in High School Science Classes: **PROMISING**
- Making Connections: Replicating and Extending the Utility Value Intervention in the Classroom: **PROMISING**
- Targeted Identity-Safety Interventions Cause Lasting Reductions in Discipline Citations among Negatively Stereotyped Boys: **STRONG**

RESOURCES

- Evidence-Based Practices for Assessing Students' Social and Emotional Well-Being
- Motivation Matters: How New Research Can Help Teachers Boost Student Engagement
- What We Know about Purpose & Relevance from Scientific Research
- Build Connections for Classrooms Guide
- Structures for Belonging: A Synthesis of Research of Belonging-Supportive Learning Environments
- Social and Emotional Learning Interventions
- Interactive SEL Framework
- Structures for Belonging: A Synthesis of Research on Belonging-Supportive Learning Environments

Mental Health Interventions

Many students suffered significant stress during the pandemic, and, in some cases, trauma. Schools and communities have noted a rise in negative mental health outcomes for students, including higher rates of depression and anxiety, and more students are reporting feelings of fear and hopelessness. All three rounds of Covid relief funding have recognized student mental health needs as a priority for schools, and states and districts should invest federal aid into interventions and practices that best support distressed students.

THE RESEARCH

Before schools can determine the appropriate supports and services for their returning students, they should first identify their mental health needs. Traditionally teachers have referred students for services, but this role can be challenging in the best of times. Systematic mental health screenings for all students can lead to earlier identification of more of the students who need services. A 2013 study by Katie Eklund of the University of Arizona and Erin Dowdy of the University of California, Santa Barbara, found that a systematic approach significantly improved student access to mental health services. Approximately four students in each classroom in 20 elementary schools (867 students total) in a large school district in California were randomly selected to be screened by teachers. Using traditional screening methods, the teachers identified 61 at-risk students; with systematic screening, that number jumped to 160.

In addition to determining what services are needed, schools and districts can support students by investing in targeted interventions for students experiencing trauma. One such targeted intervention, Cognitive Behavioral Intervention for Trauma in Schools (CBITS) is designed for students who have lived through, or are currently experiencing, traumatic events. and for those suffering from anxiety, depression, post-traumatic stress disorder (PTSD) and related issues. CBITS consists of 10 group sessions, one to three individual sessions, two caregiver meetings, and an optional school staff information session.

Three separate RAND Corporation studies found that the CBITS approach led to significant improvements for student mental health and academic achievement. The first study, in 2003, found that Latinx students who received CBITS had significantly greater improvement in PTSD and depressive symptoms compared with those on the waitlist. Another study, in 2011, found that students who received CBITS had a significantly higher spring semester mean grade in math and were more likely to be passing language arts classes. And a 2010 study found implementation of CBITS in New Orleans after Hurricane Katrina led to a significant reduction of PTSD symptoms among students.

Another targeted intervention is Bounce Back, a 10-session cognitive-behavioral group intervention aimed at elementary school children exposed to a range of traumatic events. In a 2015 RAND study, 74 students in grades one through five in four Title I elementary schools in Los Angeles County who had clinically significant posttraumatic stress symptoms were randomized into immediate and delayed (three-month waitlist) Bounce Back groups during the 2011-12 and 2012-13 school years, implemented by school clinicians

trained in the intervention. The immediate treatment group demonstrated significantly greater improvements in parent- and child-reported anxiety and trauma symptoms over the three-month intervention compared to children on the waitlist. The immediate group sustained their progress during follow-up sessions.

In addition to targeted interventions for students identified as needing services, educators should also implement trauma-responsive teaching practices and other whole-school strategies that center on student mental health. PBIS (Positive Behavioral Interventions & Supports) provides technical assistance and other resources for implementing such strategies. Schools can also invest in professional development to promote teacher awareness of mental health challenges and training on how to support distressed students. Tulane University's 2018 study of 183 teachers from six schools found that investing in a two-day professional development program about trauma-informed teaching practices significantly increased teachers' awareness of student mental health issues and increased the likelihood they would use trauma-informed instructional approaches.

WHAT TO CONSIDER

While schools should prioritize students' mental health needs, evidence also supports investing in the well-being of educators. Teachers returning to classrooms in the aftermath of traumatic events and natural disasters, including the Covid pandemic, could suffer higher rates of anxiety, depression, and PTSD symptoms that should not be left unaddressed.

RESEARCH

- Screening for Behavioral and Emotional Risk Versus Traditional School Identification Methods: **PROMISING**
- A School-Based Mental Health Program for Traumatized Latino Immigrant Children: **PROMISING**
- Effects on School Outcomes in Low-Income Minority Youth: Preliminary Findings from a Community-Partnered Study of a School-Based Trauma Intervention: **PROMISING**
- Children's Mental Health Care Following Hurricane Katrina: A Field Trial of Trauma-Focused Psychotherapies: **PROMISING**
- Bounce Back: Effectiveness of an Elementary School-Based Intervention for Multicultural Children Exposed to Traumatic Events: **PROMISING**
- Evaluating Foundational Professional Development Training for Trauma-Informed Approaches in Schools: **PROMISING**

RESOURCES

- Becoming A Trauma Responsive School
- Transforming Education's SEL Integration Approach for Classroom Educators
- Mental Health in High School: The Teacher's Perspective

Equitable School Discipline

Given the trauma and isolation students and staff have suffered during the pandemic, schools should develop a measured response to discipline. Studies show suspensions are correlated with lower student achievement, and that Black and Latino students, whose communities were hardest hit by the pandemic, have higher suspension rates than their White peers. Covid relief money can be used to implement equitable school discipline practices and a nonpunitive approach to conflict. This approach, which research shows lowers suspension rates and improves school climate, can include restorative practices, in which students come together in peer-mediated small groups to talk, ask questions, and air grievances.

THE RESEARCH

Restorative practices, which originated in the criminal justice system, have gained a foothold in schools in the past decade as districts look for ways to reduce disparities in discipline practices. Restorative practices can include affective statements, which tell a person how their behavior makes the individual feel; restorative questions, which ask the student what they were thinking during a situation and how they could have handled it differently; and restorative meetings with families, which give the family an opportunity to hear the student's decision-making process and make their own affirmative statements. Restorative practices can also include use of physical spaces such as a "peace room," which is a dedicated safe space for students to work through difficult emotions and situations.

In 2018, the RAND Corporation **evaluated** the impact of restorative practices in Pittsburgh Public Schools by randomly assigning schools to implement a program from the International Institute for Restorative Practices. The program included training all staff on affective statements, restorative questions, restorative approaches with families, and more. After two years, staff reported stronger relationships with students and additional staff reported having the ability to manage student conduct. Ratings of teacher and school leadership also increased. Female students had a 27 percent reduction in days of instruction lost to suspension after two years of the program. And Black students and socioeconomically disadvantaged students each had a 16 percent reduction.

Researchers at Chapin Hall at the University of Chicago in 2017 **studied** the impact of the "peace room" component of restorative discipline. After combining data on the use of peace rooms with data on discipline from Chicago Public Schools, the researchers found that students who used the peace room received 30 percentage points fewer out-of-school suspensions and 14 percentage points fewer in-school suspensions compared to those who did not use the room.

A 2013 **study** by researchers at Rutgers University used surveys of 412 students in 29 high school classrooms to understand the impact of restorative practices on teacher-student relationships and school discipline. They found teachers with high levels of implementation of restorative practices had more positive relationships with diverse students and issued fewer referrals for

suspensions or expulsions, including for Latino and Black students, compared with teachers with low levels of implementation.

However, University of California, Irvine, researchers found in a 2019 working paper that White students benefited more than their peers from the lower discipline rates in the restorative

system, a finding which could exacerbate discipline disparities. In a second study, RAND researchers note restorative practices may only be effective in elementary schools and may not improve academic achievement at any level. The RAND findings are complicated by the fact that some control schools in the study implemented restorative practices, which likely diminished the comparative impact of the practices.

WHAT TO CONSIDER

Restorative practices are most effective when schools make a wholesale shift to that disciplinary framework, with strong buy-in from faculty and staff. The RAND Corporation recommends implementing practices that can be woven into the school day. The researchers also suggest providing teachers with mandatory professional development, books and other materials on restorative discipline, as well as coaching and feedback from school leaders.

RESEARCH

- Can Restorative Practices Improve School Climate and Curb Suspensions?: **MODERATE**
- Restorative Justice Reduces Use of In-School Suspensions: **MODERATE**
- The Promise of Restorative Practices to Transform Teacher-Student Relationships and Achieve Equity in School Discipline: **PROMISING**
- Restorative for All? Racial Disproportionality and School Discipline Under Restorative Justice: **MODERATE**
- Evaluation of a Whole-School Change Intervention: Findings from a Two-Year Cluster-Randomized Trial of the Restorative Practices Intervention: **MODERATE**

RESOURCES

- TOOL: Create a High School Peace Room
- Restorative Justice Program Guidelines
- The Promise of 'Restorative Justice' Starts to Falter Under Rigorous Research
- Restorative Justice in U.S. Schools: A Research Review

Facilities Upgrades

The pandemic has increased public awareness of the importance of good ventilation in schools, both to prevent the spread of the airborne Covid virus and to create an overall healthy learning environment for students and staff. According to a 2020 U.S. General Accountability Office report, as many as 36,000 schools nationwide had inadequate heating, ventilation and air conditioning (HVAC) systems pre-pandemic. Likewise, an estimated 400,000 schools and childcare facilities use lead pipes to deliver water to staff and students, putting children at risk for damaging lead exposure, according to a White House proposal. Many of these poorly equipped schools are in underserved communities.

THE RESEARCH

Research suggests that ventilation systems have a significant impact on student achievement. Overheated classrooms can negatively impact learning, according to a 2018 study led by Boston University economist Joshua Goodman. Goodman's research team found that hotter school days in the previous year were linked to lower results on the PSAT, an impact that was two to three times larger among students living in communities with concentrated poverty than for their more affluent peers. For every degree Fahrenheit of increased heat, the scores dropped by an amount equivalent to 1 percent of a year's worth of learning.

Opening windows can help dispel Covid particles in classroom air, but can complicate student health in other ways, especially if outside air is polluted by industrial sites or heavy traffic. Air pollution can exacerbate asthma and interfere with brain development, as well as lead to increased school suspensions and absences, several studies show. A research team led by Piers McNaughton of Harvard's T.H. Chan School of Public Health found that exposure to particulate air pollution was associated with higher rates of chronic absenteeism, while green space around the school was linked to better attendance. The findings were the same regardless of the student's race or income level, according to the team's 2017 study.

University of Tulsa researchers found in a 2015 study that improved ventilation and the accompanying decrease in classroom temperatures and carbon dioxide levels were associated with a significant improvement in math scores. Good ventilation can also contribute to better attendance, according to a 2013 study led by Mark Mendell at the Lawrence Berkeley National Laboratory. Researchers studied 150 classrooms in 28 California schools for two years and found that updating classroom ventilation systems to state standards could bring a 3.4 percent decline in illness-related student absences.

Lead exposure has long been linked to weaker cognitive development and poorer academic performance. The events in Flint, Michigan, where changes to the water supply nearly a decade ago led to widespread exposure to lead, provided a natural experiment for economist Jessica Sauve-Syed, then at Syracuse University. Sauve-Syed compared performance of the same students before and after their exposure to lead in theater and found that the share of those reading proficiently dropped, on average, 12 to 14 percentage points; in math the share of proficient students dropped six to nine points, according to her 2017 report. There is no research showing the impact of replacing lead pipes on student achievement, but other science on lead exposure strongly suggests a positive impact on students.

WHAT TO CONSIDER

Capital projects using Covid relief money must receive approval from state and federal authorities and abide by their rules on competitive bids and wages. While the American Rescue Plan and CDC guidance encourage school districts to upgrade ventilation, federal guidance cautions against using relief money for extensive construction projects, since the funds must be obligated by September 2024. Districts that want to pursue this option should start as soon as possible with an assessment of school building needs. The Biden administration's infrastructure proposal, under consideration in Congress, currently provides money for school repairs and replacing lead pipes.

RESEARCH

- Impact of Particulate Matter Exposure and Surrounding "Greenness" on Chronic Absenteeism in Massachusetts Public Schools: **PROMISING**
- Association of Classroom Ventilation with Reduced Illness Absence: a Prospective Study in California elementary schools: **PROMISING**
- Effects of Classroom Ventilation Rate and Temperature on Students' Test Scores: **MODERATE**

RESOURCES

- School Districts Frequently Identified Multiple Building Systems Needing Updates or Replacement
- Foundations for Student Success: How School Buildings Influence Student Health, Thinking, and Performance
- The Ventilation Problem in Schools: Literature Review
- Heat and Learning
- Lead in the Drinking Water in Our Public Schools: Our American Way of Life

School-Based Health Services

Student health will be a major concern as schools reopen in the fall of 2021. Schools must continue to prevent the spread of Covid and cope with new and intensified health challenges related to the pandemic. Many students have missed regular checkups, and an estimated one in five has not received regular vaccinations against childhood diseases. Other students are struggling with anxiety and depression. Beyond hiring nurses and psychologists, schools and districts can use Covid relief money to expand access to health services by setting up full-service clinics in schools. They can also establish telehealth systems that encompass a range of services, from phone calls with doctors or nurses to video-based e-visits and online health questionnaires.

THE RESEARCH

Ensuring students take the Covid vaccine as soon as they become eligible will be a priority in many districts and communities. In addition to Covid vaccinations, schools can consider offering flu shots on campus to help cut down on absences. For example, school districts in central Texas delivered flu shots in the fall of 2016 to 38,032 students in 262 elementary and middle schools through an Austin-based regional education collaborative known as E3. The E3 study showed the biggest drops in absenteeism rates during the peak flu weeks among schools with the highest vaccination. In 2012, Texas A&M University researchers found elementary school students who received flu shots at school had fewer absences than their unvaccinated peers. Neither of the Texas studies evaluated academic results. However, researchers at Armstrong Atlantic State University in Georgia found gains in both academic achievement and attendance among students vaccinated against the flu. They suggested the benefits could extend to entire school communities, as the vaccinations seemed to increase herd immunity against the flu.

Likewise, several studies suggest that school-based health centers improve attendance and a sense of connection to school among students. Across the U.S., nearly 2,600 schools with a total of 6.3 million students have clinics designed to promote healthy living and offer preventative care for chronic health conditions. A 2010 study by a researcher at St. John Fisher College compared outcomes for students who visited school-based clinics to those who visited school nurses. Students who visited clinics were less likely to be sent home from school or lose "seat time" than those who saw nurses—outcomes that could potentially impact academic achievement. According to 2003 study by researchers at Montefiore Medical Center in Bronx, N.Y., students with asthma who had access to a school clinic were less likely to be hospitalized and attended school an additional three days, compared to similar students in schools without clinics.

Another evidence-based approach to expanding school health services is telehealth. A student whose asthma symptoms flare can without leaving school. Or a dental technician can clean children's teeth at school and communicate with a dentist off-site about any serious problems. For students, especially those in remote communities or in neighborhoods served by few doctors, telehealth can save hours of missed school. In Rochester, New York, schools reduced asthma attacks by increasing in-school services for children through regular telehealth visits with specialists, according to a study

led by University of Rochester researchers. In California, Virtual Dental Home delivers care to more than 40 sites, including elementary schools in low-income neighborhoods and Head Start centers. The program has shown promising results, as it allows patients to receive dental care while avoiding the logistical challenges and costs to families of taking students out of school.

WHAT TO CONSIDER

School nurses, counselors and healthcare providers will play a vital role in ensuring students come to school healthy and stay healthy post-pandemic. They should be involved in planning for reopening and in the development of protocols for social distancing, testing, and contact-tracing.

One of the biggest challenges in providing school-based health services is cost. Clinics rely on various combinations of local, state and federal dollars that are not guaranteed for the long term. Insurance reimbursements and Medicaid can supplement the clinics, but often involve complex billing systems that schools have trouble managing. Telemedicine can provide a more sustainable model, but often involves considerable start-up costs for buying equipment and ensuring adequate internet speed and bandwidth capabilities. Covid-relief aid can pay for infrastructure, equipment, and short-term staffing support for these programs.

All school-based health services, including telehealth interactions, require attention to federal privacy rules for sharing student information with providers beyond the school staff. Flu shots or other immunizations require parental permission.

RESEARCH

- Efforts to Improve Attendance in Central Texas: "Kick the Flu": **PROMISING**
- School-Located Influenza Vaccination and Absenteeism among Elementary School Students in a Hispanic Community: **PROMISING**
- Impact of School Flu Vaccine Program on Student Absences: **EMERGING**
- Burden of Asthma in Inner-City Elementary Schoolchildren: **PROMISING**
- The Relationship Between School-Based Health Centers, Rates of Early Dismissal from School, and Loss of Seat Time: **PROMISING**
- Effect of School-Based Telemedicine on Asthma Management: **STRONG**

RESOURCES

- The Cost Benefit of Comprehensive Primary and Preventive School-Based Health Care
- School-Based Health Care Support Toolkit
- Telemedicine in Schools Helps Keep Kids in the Classroom
- Roadmap for Action
- Center for Connected Health Policy

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