

RAZA DEVELOPMENT FUND COVID-19 EDUCATION RESEARCH & INTERVENTION

Data collection, analysis, and targeted interventions:

Strategies for short-term and effective interventions to combat
Covid-19 related learning loss in lower-income schools



EXECUTIVE SUMMARY

Since March 2020, the pandemic related disruptions to education have disproportionately affected Latino and black students, as well as English Language Learners and students with IEP's, widening the achievement gap considerably. Early research at the end of the 2019-2020 academic year indicated that quick responses to the closures prevented interruption of learning and helped prevent immediate losses, improved attendance, and connectivity to school community.¹ However, by the Fall of 2020 school closures demonstrated their imminent impact. Based on diagnostic, interim, and year-end testing there were considerable losses among all students between March 2020 – December 2020, with an avg. of 13% decrease in reading scores K-5 and a 32% decrease in math scores K-5.² Schools serving 50% or greater students of color demonstrated a decrease of 23% and 41% respectively. A follow-up study for the 2020-2021 school year indicates that the gap continued to grow for K-12 to an equivalent of 4 months of learning loss in reading and 5 months in math.³ These national trends were confirmed on a more local level through nine New York City charter schools, which indicated concerning gaps especially in reading for K-2, math in 5-7, and the social emotional wellness and engagement of High School students.

Understanding the gaps in learning and developing effective interventions are critical, especially given the clear evidence of learning loss in reading and math, and the importance of these subjects for future academic performance. While increased resources will need to be deployed to address additional learning losses and prevent further regression, the success of large cash infusions will likely depend on the extent to which they can be deployed wisely on a local school or district level. Over \$200 billion⁴ of Covid related relief from government subsidies has been poured into our K-12 educational system. Helping schools collect, analyze, and evaluate data to identify gaps and respond with effective interventions will be central to a sustainable plan for continuing gains and lessening the achievement gap long after these massive cash infusions are available.

Through a Capital One Impact Initiative grant, nine New York City Charter schools were selected to receive a grant of \$25K to assist efforts at providing remediation for students disproportionately affected by pandemic school closures. These charter schools provided a representative sample for how schools collect and analyze data to identify student learning loss and develop and evaluate models of intervention. The process of student selection, the incorporation of key stakeholders, as well as the implementation and evaluation of intervention impact were key variables in student improvement.

- Schools with systems of data collection and analysis that integrated standardized testing along with classroom performance, teacher observation, and parent feedback did better in identifying students in need of intervention.
- Students responded and performed better to interventions that focused on short term improvements and evaluated improvements weekly or monthly.
- One-on-one tutoring (in-person and online) had greater impact when it was focused on specific concepts and limited to 5-10 hours.
- Pull-out interventions specific to key concepts needed, and not necessarily separated by grade level reported greater levels of improvement.

¹ San Juan Diego Institute, *The Impact of Coronavirus on K-12 School Attendance, Performance and Culture, May, 2020.*

² McKinsey & Company, *Covid-19 and Learning Loss—Disparities Grow and Students Need Help, December 2020, pg 3.*

³ McKinsey & Company, *Covid-19 and Education: The Lingering Effects of Unfinished Learning, July 2021,*

⁴ K-12 Spending at \$13.2B CARES Act - March 2020, \$54.3B from Education Stabilization Fund Dec 2020, \$132.6B American Rescue Plan - March 2021. Estimate addition \$200B from Bipartisan Infrastructure Framework – August 2021.

GRANT DESIGN

Nine New York City Charter Schools were selected to participate in the grant. Each school adopted a new model or modified an existing model of intervention and worked with the research team to identify target goals. The schools selected students and subjects for intervention based on available testing and classroom data. Schools shared anonymized data and a rationale for selection with the research team.

After a semester long implementation of their respective interventions, each school provided their analysis of impact and available data sets.

The research component of the grant focused on providing three distinct deliverables.

- 1) Evaluation and verification of existing student assessments.
- 2) Design, development, and implementation of school-based intervention strategies for remediating students at risk of falling further behind.
- 3) Evaluation of interventions on three metrics: A) Student improvement as based on quantitative assessments, as well as teacher and parent feed-back. Did it work? B) Ease of deployment and high degree of replication. Can it be replicated? C) Actual per student cost of intervention. Is it financially feasible?

LIMITATIONS

Much of the focus was on understanding each school's use of data in their decision-making process and their evaluation of intervention impact. The research team received two data sets from each school. The first data set focused on learning losses and school rationale for student selection. The second data set focused on baseline, interim and final testing scores to determine immediate intervention impact. The research had a limited focus and did not seek to collect data from previous years for comparison, but individual schools factored in previous years data in their individual analysis.

RESEARCH QUESTIONS

- 1) What learning loss has occurred during the pandemic? Especially for children attending charter schools serving lower income families in New York and surrounding states.
- 2) What assessments are schools using to understand learning loss that occurred during the pandemic and subsequent school closures, and are these assessments verified by teachers and parents?
- 3) What models of strategic intervention are being deployed? How are they being assessed? Are they working?
- 4) What types of strategic interventions need to be developed and implemented?
- 5) What are the best-practices for intervention and remediation moving forward?

RESEARCH TEAM

Ryan Hanning PhD, Fellow, San Juan Diego Institute
Marisa Cannata PhD, Associate Professor of Practice, Vanderbilt University
Adrian Ruiz, Deputy Chief Investment Officer, Raza Development Fund

SCHOOLS

<i>School</i>	<i>City</i>	<i>State</i>	<i>Zip</i>	<i>Grades</i>
Amber Charter School - Kingsbridge	Bronx	NY	10463	K-4
Amber Charter School - East Harlem	New York	NY	10029	K-5
Academy of the City Charter School	Woodside	NY	11377	K-6
The Renaissance Charter School - Jackson Heights	Jackson Heights	NY	11372	PK-12
Brilla College Preparatory Charter School	Bronx	NY	10454	K-7
Brilla Veritas Charter School	Bronx	NY	10455	K-2
MESA Charter High School	Brooklyn	NY	11221	9-12th
LEEP Dual Language Academy	Brooklyn	NY	11220	K-1
Dr. Richard Izquierdo Heath and Science Charter	Bronx	NY	10456	6-12th



SCHOOL SELECTED INTERVENTION & IMPACT SUMMARIES

Amber Charter Kingsbridge & East Harlem

Intervention Summary: Amber Charter Network consists of two K-5 schools located in East Harlem and Kingsbridge serving a growing community of 945 students at two locations. They identified 120 students not performing as expected as determined on the [iReady](#) assessments. To assist in the mastery of key reading skills (phonics, sight words, phonemic awareness) as well as reading and writing at grade level, Amber coordinated for up to 13 hours of individualized 1:1 tutoring with Varsity Tutors. Varsity tutors had access to the specific needs of each student and provided remote tutoring in the assigned areas and provide feedback to the school. 50 students participated in between 1 & 32 hours.

Impact Summary: Varsity Tutors represents a unique third-party partner that has the capacity to provide specific pull-out remediation with varying degree of success. Parent choice and scheduling provides a benefit to schools who do not have to utilize their time, nor resources for scheduling student interaction with tutors. Varsity Tutors provides scheduling for afterschool as well as proprietary assessments and grade aligned assignments. The data set did not provide clear correlations between number of hours in tutoring and improved test performance on iReady; some students had a negative change post intervention. However, it appears that certain students gained considerably with tutoring. Some potential conclusions can be drawn, including students that participated in 7+ hours of tutoring and participated in Varsity Tutors assessments had some of the highest gains (+10.6%) overall. While the small data set of 50 students does not provide conclusive evidence on its own, the 2nd grade teachers provided significantly positive reviews regarding student confidence and improvement in classroom performance.

Brilla College Prep & Veritas Charter

Intervention Summary: Brilla Charter network consists of two K-8 schools serving a growing population of 810 students at two locations in the Bronx. Through a rigorous data set of 3 diagnostic assessments ([iReady](#), [NWEA Maps](#), [STEP ELA](#)) along with formative assessments, there was clear evidence that all Kindergartners and 1st Graders were testing low in letter, phonemic awareness, sight word and sight word rhyme. As such, all could benefit from intervention on fundamental reading skills. Three distinct programs were used to facilitate the content of rotation guided reading groups and blended learning at each school. Lalilo, Foundations, & Wilson Reading System, in addition to Words Their Way were used at all three schools. (Note: A third school Brilla Caritas opened in 2020 will also receive similar intervention).

Impact Summary: Brilla's structured intervention ended up focusing on using three principle means for intervention; iReady Teacher Toolbox for Math, and Wilson Foundations K-2, and Wilson Reading System 3-4. All students needed some additional help, so the original plan for intervention was applied system wide in weekly 1 hour intervention blocks (2 x 30 min Math, 2 x 20 minute Literacy). Students testing above 50th percentile in NWEA were placed in structured reading groups of 8 students, students between 25th and 50th percentile in structured reading groups of 6, and students below 25th percentile with learning specialist in groups of 4. All students below 50th percentile had daily progress monitoring. Testing data from NWEA and STEP was taken either in-person or remote depending on the selected modality of student learning and as such more analysis is necessary to determine if testing modality affected overall impact. Teacher impressions were that in-person interventions worked better overall. Of the in-person, remote and hybrid interventions students testing in the 25% percentile and below (those most at-risk),

58% improved with an average percentile increase of 10.5%. Of those testing in 50th percentile and below, 42% improved with an average percentile increase of 12%.

LEEP Dual Language

Intervention Summary: LEEP Dual Language Academy currently serves a growing community of 238 students in Brooklyn. They identified 60 students based on NWEA MAP, NWEA Math and STEP in English and Español who were performing significantly below grade level. These students received direct intervention in ELA, Math or both. Reading intervention consisted of 3x a week per student, with Math intervention as well being delivered 3x a week per student. Students were placed into small groups of 4 due to Covid restrictions. Pull-out interventions occurred twice a week in reading or math. Push-in support in related subject took place once a week in reading or math. The intervention teachers/tutors providing the pull-out services participated in all grade level team meetings and maintained a high level of interaction with teachers creating a nexus for a continuous feedback loop. Remote students received a morning literacy intervention or an afternoon math intervention. Some students were receiving BOTH reading and math interventions, which means they received additional support up to 6x a week. In reading, teachers planned a 30 minute lesson (10 minutes on phonics skills 10 minutes on guided reading lesson and 10 minutes discussing the text via factual, inferential, and critical thinking questions. This happened once in English and once in Spanish.) Then their teacher supported these students by pushing in to one of their literacy blocks. In Math, teachers prepared a 30minute intervention lesson using the Bridges Math Intervention Curriculum; each intervention lesson was aligned to a progress monitoring tool after a series of 5 lessons. The lessons were chosen based on the skills indicated from their NWEA Math RIT score. This happened twice a week and then the teachers pushed-in to a math class to support their students with grade level content.

Impact Summary: LEEP's combination of pull-out and push-in allowed for rapid daily interventions focused granularly on key concepts. With three 30-minute reading, and three 30-minute math interventions weekly, students received a considerable amount of time dedicated to specific skills. Of the 60 students in the reading intervention all but 4 had positive growth, no students regressed. 1st graders averaged a 3.5 STEP Growth, and 2nd graders 7.5 STEP Growth. These results far exceeded the anticipated 1 to 2 Steps anticipated. Of the 59 students in the math intervention, all but 5 had positive growth. 1st graders averaged an increase of 8.5 RIT on their NWEA, and 2nd graders averaged an increase of 18.25 RIT on their NWEA.

Academy of the City:

Intervention Summary: Academy of the City is comprised of an Elementary and Middle School serving a growing community of 645 students. They identified 160 students performing below grade level in ELA and Math ("at promise students," ELL and IEP) according to the Fountas and Pinnell, Go Math, and Measuring Up assessments. Elementary school students received additional formation using Lexia Core 5. Middle school students received additional formation and instruction in small reading groups of 8 based on standards not mastered in Measuring Up diagnostic.

Impact Summary: Academy of the City used Lexia Core 5 to remediate students identified as reading below grade level. Of 30 Kindergartners, 22 made sufficient progress with an average increase of 1.33 reading levels from winter to spring. Of 31 1st Graders, 25 made sufficient progress with an average

increase of 2.5 levels moved between winter and spring reading level. Of 25 2nd Graders, 21 made sufficient progress with an average increase of 1 level moved between winter and spring reading level. Of 17 3rd Graders, 14 made sufficient progress with an average increase of 1 level moved between winter and spring reading level. Of 17 4th Graders, 11 made sufficient progress with an average increase of 1.25 levels moved between winter and spring reading level. For the 15 middle-schoolers participating in structured reading groups 5th grade proficiency was raised by 12%, 6th grade 13%, and 7th grade by 33%.

The Renaissance Charter School

Intervention Summary: Renaissance Charter located in Jackson Heights (and a new campus in Maspeth not included in the grant) serves a growing community of 684 students. They identified 100 students who did not perform at grade level based on NWEA MAP and A-Net assessment data. These students received additional support services from 3 reading specialists to assist in targeted reading interventions using Lexia (6th -7th) and Headsprout (K-5), as well as being assigned reading buddies to insure additional practice and support from older students.

Impact Summary: Renaissance Charter worked with 100 students who were testing below grade level in reading. Targeting reading intervention program (TRIP) was provided to these students in small reading groups with specialists weekly using Lexia Core 5 for 6th and 7th, and Headsprout Kindergarten through 5th. NWEA RIT scores indicate growth across all grades 1-6, with no available data from K and 7th. RIT score improvement from Winter 2020 to Spring 2021 was 28.2 points for 1st grade, 9.4 points for 2nd grade, 12.3 for 3rd grade, 12.5 for 4th grade, 6.2 for 5th grade, and 2.1 for 6th grade.

MESA Charter High School

Intervention Summary: MESA Charter High School is well respected STEM focused high school of 498 students engaged in college readiness and career preparation throughout all 4 years of high school. With a high-touch in-person culture, moving the school online meant a lack of contact with incoming Freshman, and Sophomores. Without the benefit of Regents testing in 8th grade, and the more rigorous baseline assessments that happen in the classroom, MESA found that 9th and 10th graders, especially those in ELL or on an IEP were performing below level on formative assessments compared to their peers. To assist students and focus on replicating some of the interpersonal culture of the school, student peer mentors and tutors were nominated by teachers and trained to serve 120 students. Peer tutors were paired with teachers and served as TA's providing subject based tutoring services for ELL and Special Needs students. Peer mentors provided social emotional support and met with students online or in-person at the school.

Impact Summary: MESA's creative tutoring and mentoring program engaged students as peer leaders in a capacity to tutor alongside a teacher as a homeroom aid, as an independent peer tutor, and/or as a peer mentor to encourage connectivity to school and community despite being in an online school due to Covid. 17 students received training to be a tutor. 5 students served as TA's to AP Seminar, STEM 9th Grade, Geometry, Earth Science, and AP US History, 12 students served as direct tutors to 20 students. The anecdotal feedback from teachers and students was overwhelmingly positive, and participating students indicated improvement in both subject and connectivity to school. Most impressive is that

students in the program had a 9% better weekly attendance rate than their peers, 76% vs. 85%, while in the program.

Dr. Richard Izquierdo Health and Science

Intervention Summary: Dr. Richard Izquierdo Health and Science Charter School is a health focused charter school serving 797 6-12th grade students in the Bronx area in the poorest congressional district in America. They have been impacted by both Covid and recent administration transition and are attempting to rebuild school's focus of data driven interventions to ensure each student's success. Middle School Students performing below grade level received additional support in ELA and Math via 3 hour Saturday School, and weekday intervention using Dreambox for Math, and Achieve 3000 for Reading Comprehension.

Impact Summary: Dr. Richard Izquierdo Charter School identified students performing below grade level and provided intervention in ELA and Math via 3 hour Saturday School (1.5 hours each subject), and weekday intervention using Dreambox for Math, and Achieve 3000 for Reading Comprehension. Final data sets weren't submitted within required time frame to be included for analysis.



FINDINGS:

Each school's process of data collection and analysis and subsequent student selection and intervention(s) were unique. As such, this study relied heavily on our interactions and assessment of individual schools. Where comparison is appropriate, we have integrated data sets and findings.

- 1) What learning loss has occurred during the pandemic?
 - All schools indicated significant learning losses specifically in ELA and Math, with significant concern for ELL and students on IEP's. Reading scores for K-2nd were concerning bordering alarming, especially considering the importance of literacy into 3rd grade and beyond. 5th-7th Math scores were also concerningly low and an indicator of future performance issues in STEM. All schools were also concerned with the social emotional health of their students.
- 2) What assessments are schools using to understand learning loss that occurred during the pandemic and subsequent school closures, and are these assessments verified by teachers and parents?
 - Schools heavily utilized standardized testing scores; however, some of the schools integrated scores from multiple streams of testing. Schools that further triangulated data with teacher observation and parent feedback tended to have greater confidence in using their data.
- 3) What models of strategic intervention are being deployed? How are they being assessed? Are they working?
 - Most strategic interventions are programmatic and curriculum based relying on push-in interventions implemented by teacher. Second, are pull-out interventions utilizing interventionist and specialist. Third, were interventions built into testing programs that provided granular student, class and school data for increased focus and re-teaching.
- 4) What types of strategic interventions need to be developed and implemented?
 - All three approaches mentioned above had demonstrable impact. Given the unique challenges of the online environment and remote instruction, comparing interventions is difficult. Schools indicated that simpler interventions that combined focused and intense push-in and pull-out interventions focused on specific outcomes tended to have better results.
- 5) What are the best-practices for intervention and remediation moving forward?
 - See below, a short list of some of the substantive findings of this grant.

FINDING 1 - Good data along with analysis and systems to make data-driven decisions directly impacted student outcomes

- Schools with several years of testing data from different assessment sources (e.g. NWEA, STEP, iReady), plus well-developed teacher feedback, and classroom data, that routinely used that data in the decision making process, could quickly identify student performance issues and develop meaningful tactical interventions.

FINDING 2 – Short-term remediations and exhaustive programmatic interventions had similar impact on student improvement

- Teacher feedback and testing data supported more focused and intense small group interventions (4 to 6 weeks) that identified core concepts and worked towards mastery.

FINDING 3 – One-on-one tutoring can provide excellent results outside of typical school day

- Teacher and parent feedback along with testing data supported one-on-one tutoring as a tool to engage students and empower parents outside of the normal school day. Tutees who could identify area of struggle needed less remediation than those who were less aware of needs.

FINDING 4 – Academic level preferred to grade level pull-out interventions

- Interventionist feedback and testing data supported pull-out interventions which focused more on the learning level and skills needed as opposed to grouping by grade level.

FINDING 5 – Structured push-in remediation can provide an easy model for intervention

- Structured multi-tiered push-in remediations with opportunities for students to transition into and out of tiers with weekly progress feedback was an effectively simple model to provide improvement and additional data outside of the typical testing cycle.

FINDING 6 – High School peer engagement

- Trained tutors and mentors showed a high level of engagement and commitment when treated as valued addition to the professional staff. Training and empowering peer tutors and mentors increased attendance and school performance for participating students.

RECOMMENDED BEST PRACTICES

1 – Maintain high standards for data collection from multiple sources

- Schools should seek multiple avenues of data collection. Multiple standardized tests, classroom tests, performance indicators, teacher input, and parent observation are all tools that provide a more holistic picture of individual student performance. Standardized testing used for establishing student baseline as well as interim and final year-end scores are powerful tools. They have consistently improved over the years by using sophisticated analyses and ever-expanding comparative data sets. In addition, recent offerings from third-party educational data consultants can provide additional insights. The relevancy of standardized tests is greatly enhanced when schools consider 1) the integrity of the data collected, especially when testing is delayed, or has been modified in response to Covid related closures. And 2) how it aligns with student performance and outcomes on a classroom level.
- Processes to collect multiple streams of data as close as possible to real time can be used to identify gaps and develop more tactical interventions.

2 – Build clear systems for frequent and intentional analysis of student performance

- Many schools have systems in place to collect data (at a minimum, standardized tests, and quarterly report cards). However, managing multiple streams of data and triangulating them to provide more accurate pictures of school, class, and student performance requires frequent and intentional analysis. On a school or classroom level, test scores can be used to indicate trends, and identify areas of additional emphasis. On the student level, test scores used to chart progress and identify gaps on a more granular level can be used to identify students and match available interventions. These processes should not remain a mystery to teachers, who must be an integral part of creating the systems to collect and analyze the data as well as evaluate proposed interventions.

3 – Provide interventions that focus on quick and intense remediation

- Good diagnostic testing and teacher observation can accurately identify gaps in learning, especially in reading and math which often cause successive learning loss as foundational concepts that are missing compound over time. It is likely that the multiple interruptions due to Covid have caused most students to have gaps in their learning. Strategies for effective remediation must include an array of short, easy to implement, targeted interventions focusing on mastery of missing foundational skills. Schools can develop daily and weekly classroom time for push-in interventions, as well as shorter more intensive 4–6-week pull-out interventions.

4 – Provide interventions focusing on ability, not only grade level

- Placing students in multi-age settings that focus on similar learning gaps or skills remediation allows for more focused intervention. While grade-based grouping is often normative, multiple grade-levels focused on particular skills in reading and math had better improvement than those that were limited to grade level only.

5 – Teachers and interventionists should have a clear process for working together to improve student performance

- School administrators should develop clear processes to encourage teachers and interventionist to work collaboratively and build in time throughout the work week to provide opportunities for specific collaboration. Weekly monitoring of improvements or struggles and systems for reporting progress can better utilize resources as well as ensure the students receive the appropriate amount of intervention. With increased investments from Covid related relief funds, it is likely that many schools will hire additional interventionists and specialists. Maximizing impact will require close collaboration between all partners committed to helping students succeed.

6 – Constructively working with parents as partners in intervention and success

- Far too often intervention and remediation are seen as one sided, punitive measures. Parents, especially during Covid related closures, felt that their children were not getting the resources they needed. In addition, parents felt grounds for required intervention were often one dimensional, based solely on standardized testing data. Schools must work with parents to communicate how they identify areas for intervention, and how the planned intervention will support and provide opportunities for current and future growth. Intervention during the school day was often preferred and seen as less punitive than those that were required outside of traditional school hours. School provided opportunities for third party tutoring that was parent requested and parent scheduled were the big exception.

7 – Empowering peers to be part of the solution for academic and social emotional improvement*

- Offering creative opportunities for peers to provide meaningful tutoring or mentorship increases participation of both tutor and tutee. Well developed programs of training students to support other students, providing oversight, and valuing their time through payment or other incentives creates a professional setting in which students receive assistance that is tactical building a greater sense of belonging and connection to the school community. *This best practice is limited to High Schools.

FURTHER QUESTIONS

- How do successful schools compare year over year data to identify areas of concern, and track continued improvement?
- How do schools ensure continuity of instruction, especially with interventions that have delays or switch from in-person to online modalities?
- How do online interventions compare to in-person interventions for students who are attending remotely or in-person?
- What is the social-emotional impact of school disruptions and what interventions can address these challenges?
- How are schools planning on adjusting curriculum to build in time for addressing significant learning loss without falling behind?
- How are schools aligning resources for critical benchmarks such as 3rd grade reading?

ACKNOWLEDGEMENT

- This project was made possible through generous Capital One Impact Initiative Grant

