Voices From the Field: Lessons From the COVID-19 Pandemic Disruption of the K–12 Education System

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Introduction

The COVID-19 pandemic was one of the most disruptive events in the history of U.S. K–12 education, affecting more than 55 million students in 124,000 public and private schools at the peak of school closures in spring 2020 (Peele et al., 2021). The rapid shift to remote learning, followed by cycles of hybrid and in-person instruction, exposed and exacerbated longstanding inequities in access, achievement, and well-being across the nation's schools.

Student learning loss was unprecedented. Between 2019 and 2022, average reading and mathematics scores for Grades 4 and 8 on the National Assessment of Educational Progress declined to levels not seen in decades, with one third of Grade 8 students not meeting basic reading standards (National Center for Education Statistics, 2023). Chronic absenteeism soared, especially among students living in poverty, and the digital divide widened educational gaps for some rural and under-resourced communities (Dee, 2024). Mental health needs surged, prompting schools to expand mental health and behavioral programs and invest in support services (National Center for Education Statistics, 2022).

The federal response included nearly $190 billion in Elementary and Secondary School Emergency Relief (ESSER) funds, with 80% of state plans for the funds targeting student well-being and learning loss early in the pandemic response (U.S. Department of Education, 2025; U.S. Government Accountability Office, 2024). Despite these investments, educator burnout and staffing shortages persisted, and long-term disconnection from school dramatically altered student engagement and community investment (Modan, 2024; Westphal et al., 2022).

A Model of Disruption Recovery Stages

It is time to reflect. As the K–12 education system emerges from the unprecedented disruption of the COVID-19 pandemic, schools and districts across the country are still in the process of recovery and adaptation. This moment calls for thoughtful reflection on how we might better prepare for and respond to future disruptions, whether global pandemics or more localized crises such as natural disasters, community emergencies, or regional health events. While we hope to never experience another crisis of this scale,

the lessons learned during the COVID-19 pandemic offer valuable guidance for navigating other types of disruptions.

To begin to understand these lessons, the Research on Education Strategies to Advance Recovery and Turnaround (RESTART) Network developed a model of disruption recovery stages that recognizes shifting priorities at different points in time after the onset of a crisis (Exhibit 1). For example, in spring 2020, at the beginning of the COVID-19 pandemic, the focus was on health and safety. In subsequent years, attention shifted toward improving school attendance, school engagement, and academic recovery. By examining the unique considerations of each stage, this report aims to support education leaders and practitioners in building more resilient systems for the future.

Exhibit 1. Disruption Recovery Stages

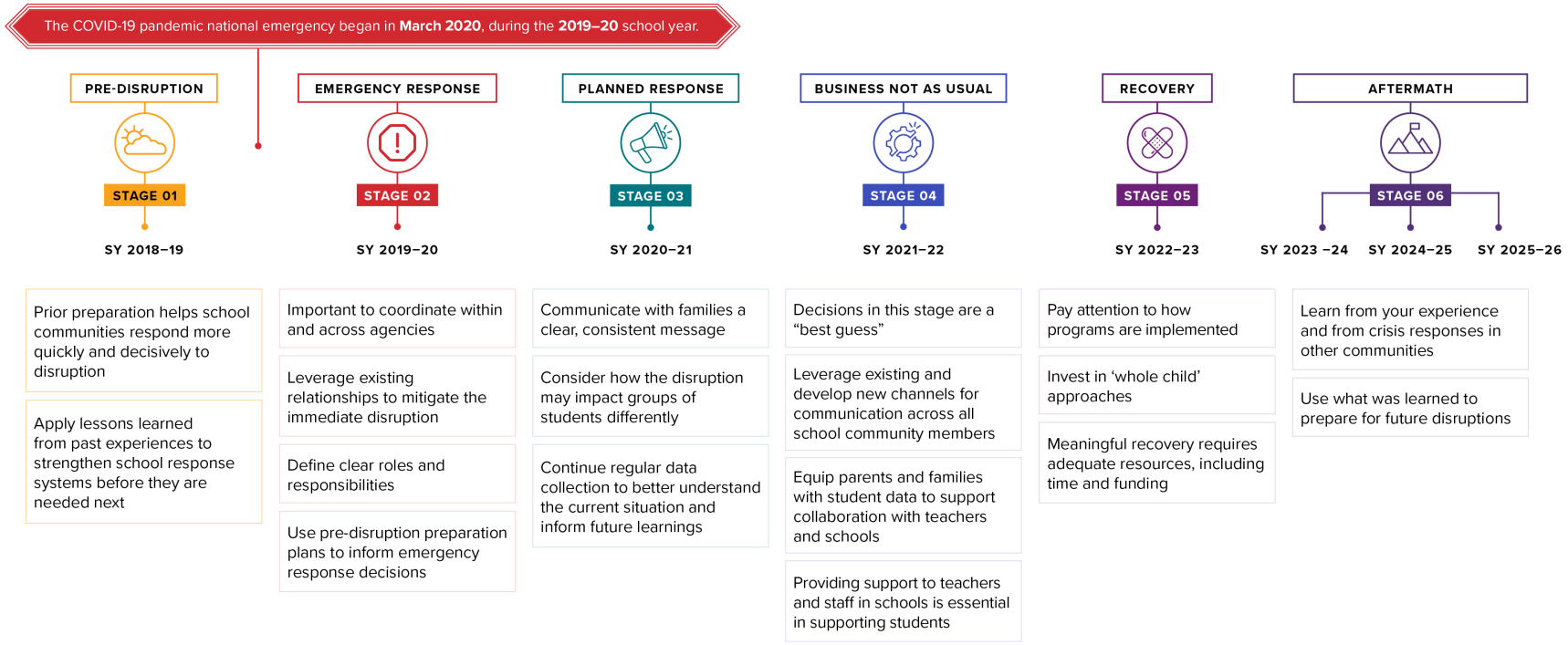

Exhibit 1 presents the disruption recovery stages, mapped onto a school year timeline of the COVID-19 pandemic:

Stage 1: Pre-disruption (School Year 2018–19). This stage highlighted the importance of proactive leadership, crisis planning, and community engagement before disruptions occur.

Stage 2: Emergency Response (School Year 2019–20). This stage was characterized by rapid decision making, remote learning, and the mobilization of resources to support families and educators.

Stage 3: Planned Response (School Year 2020–21). Schools and districts developed strategies for hybrid and in-person learning, with ongoing adaptation to evolving guidance and outbreaks.

Stage 4: Business NOT as Usual (School Year 2021–22). Continued reverberations from the pandemic required resilient systems for data collection, communication, and support for both students and staff.

Stage 5: Recovery (School Year 2022–23). During this stage, there was a focus on academic and social recovery, whole-child approaches, and addressing disparities exacerbated by the pandemic.

Stage 6: Aftermath (School Years 2023–24 through 2025–26). Schools returned to regular operations, emphasizing the dissemination of best practices and the translation of lessons learned into future preparedness.

This report draws on participant insights to illuminate challenges faced, strategies employed in response to those challenges, and opportunities to build disruption-resilient education systems throughout the COVID-19 pandemic. Rather than just looking backward, practitioners, policymakers, and researchers can use the disruption recovery stages model to support long-term improvements and prepare for future crises.

About This Report

The 2025 PK–12 RESTART Network National Forum was held on May 6–7, 2025, in Arlington, Virginia, and focused on "Building Disruption-Resilient Education Systems: Lessons From Research and Practice." This report summarizes notes and reflections

from the final session, entitled "Learning Forward – Collaborative Insights for Resiliency." The session was held with support from the Gates Foundation as part of the COVID-19 and Equity in Education project focused on COVID-19 pandemic recovery. During the session, participants discussed learnings from each disruption recovery stage, as characterized in Exhibit 1. Participants documented their insights, advice, and recommendations for each stage on sticky notes and discussed ideas in small groups. The complete list of sticky note statements is recorded in the report appendix.[1] Our team collected these insights and conducted an analysis to code and group ideas into themes which we describe in this report. We provide examples to illuminate insights and recommendations from participants and summarize cross-cutting themes across stages.

Summary of the Pandemic Crisis Stages

Stage 1: Pre-disruption (School Year 2018–19)

When the disruption recovery stages were first shared with participants, many suggested that we should have included a stage reflecting preparations conducted prior to the start of the COVID-19 pandemic. While we did not directly request insights on this stage, as we did for Stages 2–6, participants consistently identified how schools and districts should prepare in advance of disruptions. Accordingly, this summary report includes an additional stage (Stage 1: Pre-disruption) which covers the school year prior to the onset of the COVID-19 pandemic.

Participants noted that local investment in prior preparation helped some education agencies respond quicker and more decisively than other school districts and schools. Recommendations for best practices included schools preparing leadership plans to inform decision making during disruptions, and state education agencies developing systems to support local schools and districts before crises emerge. Participants highlighted that lessons from past disruptions must inform future preparations.

Reflecting on their experiences during the pandemic, participants recommended that communities develop structures to better sustain parent engagement during disruptions and identify ways to support school leaders. Further, research and

[1] RESTART staff edited sticky note statements for clarity.

dissemination were identified as critical for translating crisis experiences into lessons for future planning and preparation. Participants suggested that research findings and success stories should be shared across communities to ensure that all schools, districts, and states can learn from the pandemic. Guided by these data, educators will have the necessary resources to better prepare for future emergency disruptions in schools. Examples of participant insights are provided below.

> "Based on prior preparation, some local education agencies were better prepared for emergency response decision making and action."
>
> "How can we better prepare school leaders and support parent engagement?"
>
> "How we learn today will be critical for responses during future emergencies."

Stage 2: Emergency Response (School Year 2019–20)

The emergency response stage, at the immediate onset of the COVID-19 pandemic, was characterized by rapid, immediate decision making. Participants noted the importance of prior readiness and preparedness in supporting successful responses. During the COVID-19 pandemic, schools took on many new roles, and remote learning in the immediate emergency stage had its limitations. Implications and learnings for future crisis events were wide ranging and highlighted the importance of coordinating within and across agencies, working with communities, and leveraging leadership and relationships to manage and mitigate the immediate disruption. Recommendations for best practices included having clear roles and responsibilities, investing in clear and transparent communication, and mobilizing existing resources and developing new resources to support families and educators. Preparation for unexpected disruptions was also highlighted as a critical emergency response strategy. Examples of participant insights are provided below.

> "Community engagement and communication are of critical importance to emergency responses."
>
> "Relationship building with teachers, students, and families is essential for addressing emerging disruptions."
>
> "Based on prior preparation, some local education agencies were better prepared for emergency response decision making and action."

Stage 3: Planned Response (School Year 2020–21)

During the planned response stage (school year 2020–21), school, district, and state leaders had additional time and resources[2] to enact strategies and plans to manage remote learning, hybrid learning, and the return to in-person learning. Although this second stage was more stable than the emergency response stage, state and federal guidance was continually evolving during this time, in response to new outbreaks and variants of the COVID-19 virus. As a result, while this stage is characterized as the planned response stage, plans were still evolving and shifting as needs changed.

Participants noted many best practices for this planned response stage, including investing in sustained and accessible professional development for school staff. Participants also highlighted the importance of coordinating with federal, state, and local governments, as well as community and city partnerships. Addressing disruptions required additional financial resources and depended on school leaders' decision making and stakeholder engagement. Implications and learnings for future crisis events included considering how different types of disruptions may impact different groups of students. Participants also noted that a disruption response relies on teachers' time and resources, and that intentional efforts should be made in advance to strengthen school response systems before they are needed. As protective factors, participants highlighted that regular data collection and research partnerships can be important to ensure that learnings can be identified from disruptive events.

Areas for improvement during this stage included greater planning for adverse possibilities and increased alignment between print and digital educational materials and resources. Participants also noted that long-term disconnection from school dramatically altered student engagement and investment in school. Examples of participant insights are provided below.

> "Schools and districts should leverage community and city partnerships."
>
> "Regular data collection and establishing research partnerships can be important in learning from disruptions."
>
> "How can we make data collection and use resilient to disruption?"

[2] Elementary and Secondary School Emergency Relief (ESSER) Fund dollars helped support school planning efforts during this stage and in the school years that followed.

Stage 4: Business NOT as Usual (School Year 2021–22)

The 2021–22 school year was characterized as business not as usual, with students, staff, and families continuing to feel reverberations from the COVID-19 pandemic disruption. Participants noted that communication and collaboration were essential during this period. Best practices included developing shared leadership in schools, creating channels for communication across all school community members, and equipping parents and families with data to support collaboration. Implications and learnings for future crises and disruptions focused on the challenges and needs of teachers and school staff. Participants highlighted that school leaders and educators endured significant stress and burnout while dealing with the pandemic, requiring schools to provide additional support to teachers, leaders, and other school staff. Participants described being in "survival mode" during this period, when decisions had to be made without fully knowing what would work. Recognizing that uncertainty remained throughout this period, participants highlighted that impacts on learning varied widely and that interventions did not achieve their desired effects for all students and schools.

Opportunities for improvement during this stage included clearer state education agency supports for districts and schools, as well as more resilient systems of data collection and tracking that could enable data-informed decision making during uncertain times. Examples of participant insights are provided below.

> "Communication between entities at all levels is essential for effective rapid responses to crises."
>
> "To support students, we need to also support the adults who work with them."
>
> "We must have systems in place to collect and track data in cases of disruption."

Stage 5: Recovery (School Year 2022–23)

The 2022–23 school year was a time of recovery in schools. Participants suggested that ongoing needs sensing and data use were critical for pursuing academic and social recovery for students. Other best practices during this period included investing in whole-child approaches, developing school capacities, and paying careful attention to quality implementation. Implications and learnings for future crises included recognizing that meaningful recovery programs require time, funding, and supports for students, families, and school staff. Recovery from the COVID-19 pandemic was especially challenging because existing disparities in student experiences were exacerbated, and because recovery efforts had varying impacts on key outcomes. For

example, during this stage, student test scores were often increasing while attendance rates continued to decrease.

Participants suggested that improvements during this stage could be made by expanding research capacities and systems to better track data about school responses and recovery activities. Examples of participant insights are provided below.

> "Attention to quality implementation is important."
>
> "It takes time, support, and resources to build out effective programs for recovery."
>
> "Many data systems were not well set up to study pandemic recovery programs. This limits what can be learned."

Stage 6: Aftermath (Schools Years 2023–24 through 2025–26)

In the aftermath stage, beginning with the 2023–24 school year, schools returned to more regular operations and were interested in identifying learnings from pandemic disruptions. Participants identified communication as the critical component during this period, particularly the dissemination of schools' best practices and programs to weather the pandemic, as well as research findings and reports about impacts. Participants also noted that this period required ongoing efforts to conduct research and maintain collaborative relationships between researchers and practitioners.

Regarding learnings for future crises, participants recognized that work conducted in the aftermath of a crisis must include efforts to translate knowledge into preparation. Schools and districts should develop future emergency plans, factoring in the experiences of their local communities and the successful responses of other communities. Actions during this stage will help districts and schools prepare to respond to and recover from future crises. Finally, participants identified that schools need to devote time and meaningful effort to help students reacclimate to school behavior expectations. Examples of participant insights are provided below.

> "We should share best practices and promising programs that worked at scale during recovery."
>
> "Being prepared is essential! Learn as much as possible from the aftermath to be better prepared for the next one."
>
> "Our experiences are more similar than different, and we can learn from each other."

Key Aspects of the Crisis Response Across Stages

Considering best practices, learnings, and opportunities for future improvement across the disruption recovery stages, participants identified three key capacities: **leadership, communication, and data collection and use**.

State, district, and school leaders shape how communities respond to a crisis. Leaders are tasked with guiding decision making, managing relationships, identifying ways to support staff, and developing distributed leadership structures. Leaders are also responsible for future preparation planning, and for the development of clear and transparent messaging for their communities and stakeholders.

Effective communication helps districts and schools take on new roles to address emerging needs, establish collaborations with government and community partners, and strengthen relationships with parents and families. Preparation for future crises relies on schools and districts communicating with one another, and with researchers, about their efforts and readiness practices to mitigate disruptions.

Data collection and data use support schools and districts throughout a crisis. At the start of a crisis, preparation and preparedness efforts—rooted in past experiences and data—help communities respond to new challenges. While some data collection may be disrupted by a crisis, schools and districts can use available student and community data to inform planned response decision making and equip parents and families with information to support their children. Monitoring changes in student data can enable schools to identify critical areas for recovery with regard to academic and social-emotional learning. Lastly, collecting data on the varying responses and impacts across schools and districts can help communities identify learnings from a crisis and prepare for future disruptions.

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Appendix A. Collected Sticky Note Statements From Participants, by Stage

Exhibits A1–A6 present sticky note statements from participants related to each disruption recovery stage. We did not collect unique sticky notes from participants for Stage 1 (Pre-disruption) as this stage was not included in the initial presentation to participants. However, we identified sticky note statements from Stages 2–6 that reflected on the pre-disruption stage and present those in Exhibit A-1.

Exhibit A-1. Sticky Note Statements Related to Stage 1: Pre-disruption (School Year 2018–19)

Best practices
Communities should establish committees and leaders to prepare for and address disruptions.
We should share best practices and promising programs that worked at scale during recovery.
Findings and reports need to be well disseminated and accessible, even years beyond the disruption.
Crisis learnings
Based on prior preparation, some local education agencies were better prepared for emergency response decision making and action.
Being prepared is essential! Learn as much as possible from the aftermath to be better prepared for the next one.
How we learn today will be critical for responses during future emergencies.
We must share how districts can effectively operate in times of disruption.
Questions for the future
How can we better prepare school leaders and support parent engagement?
What to improve
We should more clearly prepare to implement practices that address disruptions.
State education agencies must set up systems and structures to support districts and schools in these situations. These need to be in place before disruption.

Note. Research on Education Strategies to Advance Recovery and Turnaround (RESTART) Network staff edited sticky note statements for clarity.

Exhibit A-2. Sticky Note Statements Related to Stage 2: Emergency Response (School Year 2019–20)

Best practices
Clear and transparent communications from federal and state governments are important for emergency responses.
Clear strategies are impactful.
Communities should establish committees and leaders to prepare for and address disruptions.
Designate clear parameters for responsibilities during disruptions.
It is important to develop resources that help parents and families utilize educational technology tools.
It is important to support educator well-being and to provide teachers with professional supports and tools.
Successful emergency responses involve mapping resources, communications plans, and efforts to support and retain teachers.
Crisis learnings
Based on prior preparation, some local education agencies were better prepared for emergency response decision making and action.
Community and relationships matter, and connections with other agencies should be developed before a crisis occurs.
Community engagement and communication are of critical importance to emergency responses.
Data availability and accessibility are critical in terms of making response tools successful.
Leadership matters in managing disruptions.
Relationship building with teachers, students, and families is essential for addressing emerging disruptions.
School disruptions may vary with regard to scale (global, national, local), length (short term versus long term), and type (health, weather, political, etc.).
Pandemic-specific learnings
Emergency remote learning had significant limitations, but negative impacts have faded over time.
Evidence suggests that the COVID-19 pandemic exacerbated ongoing problems.
In this response stage, schools had to take on many new roles.
Remote learning did not work well for many students in the emergency setting, especially young kids.
Questions for the future
Have there been ways in which the approach to technology in schools has been problematic/not ideal for students?

What to improve
Linking district and county survey data can help get a bigger picture of real-time student status during a disruption.
We did not provide necessary supports to schools and families, even when resources were available.
We should more clearly prepare to implement practices that address disruptions.

Note. Research on Education Strategies to Advance Recovery and Turnaround (RESTART) Network staff edited sticky note statements for clarity.

Exhibit A-3. Sticky Note Statements Related to Stage 3: Planned Response (School Year 2020–21)

Best practices
Additional monies were critical in helping schools survive the response stage.
Federal, state, or local governments should develop centralized plans for addressing disruptions.
Investment in professional development, both synchronous and asynchronous and one-off and sustained, is important.
Leaders' emotional intelligence is impactful in addressing disruptions.
Provide clear guidelines for data capture and analysis.
Schools and districts should leverage community and city partnerships.
Successful planned responses involve support for stakeholders, ongoing professional development and support, data sharing, and frequent progress monitoring.
Crisis learnings
Consider the different types of disruptions applicable to specific student groups.
Disruption responses rely on teachers' time and resources.
Intentional efforts should be made to develop and strengthen systems before they are needed.
Regular data collection and establishing research partnerships can be important in learning from disruptions.
Researchers, policymakers, and practitioners bring different lenses to this work.
Pandemic-specific learnings
It is possible that the long-term disconnection from school due to the COVID-19 pandemic dramatically altered student engagement and investment in school.
Questions for the future
How can we make data collection and use resilient to disruption?

What to improve
Print and digital education materials and resources may not always be aligned.
Communities would benefit from greater planning for adverse possibilities.

Note. Research on Education Strategies to Advance Recovery and Turnaround (RESTART) Network staff edited sticky note statements for clarity.

Exhibit A-4. Sticky Note Statements Related to Stage 4: Business NOT as Usual (School Year 2021–22)

Best practices
Communication and collaboration are essential.
Communication and shared leadership are key.
Communication between entities at all levels is essential for effective rapid responses to crises.
Parents and families are allies and want to be equipped with data.
To support students, we need to also support the adults who work with them.
Crisis learnings
Classroom teachers need a lot of support.
Data do not move quickly enough to inform decision making on tight timelines.
Educators are especially tired, stressed, and burned out.
It is important to focus on student engagement outcomes.
Non-teaching staff are really important.
Schools were in survival mode.
Adults in schools need different support.
We will not have all the answers, so it is important to improvise with positive intent and "do the right thing."
Pandemic-specific learnings
All interventions may not be effective for all students or all school types.
Many schools took on non-traditional responsibilities to respond to the pandemic (e.g., providing meals, devices, personal protective equipment).
There was variation in experience by socioeconomic status, locale, and student gender. We need to be flexible to address student needs.
Trauma impacts learning.
We learned that it is best to get back to in-person learning faster.
We learned that we need a plan to ensure a seamless transition from in-person to remote learning.

Questions for the future
Reflect on how our research is applicable to and actionable for practitioners and teachers.
What to improve
State education agencies must set up systems and structures to support districts and schools in these situations. These need to be in place before disruption.
We must have systems in place to collect and track data in cases of disruption.

Note. Research on Education Strategies to Advance Recovery and Turnaround (RESTART) Network staff edited sticky note statements for clarity.

Exhibit A-5. Sticky Note Statements Related to Stage 5: Recovery (School Year 2022–23)

Best practices
Attention to quality implementation is important.
Building capacity requires clear documentation of a school's state prior to change (measure institutional capacity).
Consider data and evidence in pursuit of recovery.
Districts need to be clear on their mission.
Ongoing needs sensing is critical.
We need comprehensive teams invested in a "whole child" approach to strategies that are developed.
Crisis learnings
Factors to consider to support recovery include student, family, and staff needs and circumstances.
Funding is much needed.
It takes time, support, and resources to build out effective programs for recovery.
We need longer term funding to have enough time to evaluate and sustain effective programs.
Pandemic-specific learnings
Different types of impacts and outcomes do not necessarily move together (e.g., test scores went back up while attendance went down).
There is evidence that the pandemic exacerbated current problems.
It may be important to audit individualized education program and 504 needs to find students who have slipped through the cracks.
Questions for the future
Consider interactions between child development, brain development, trauma, and learning loss.
How can we better prepare school leaders and support parent engagement?

What to improve
Effectively tracking responses on a large scale is really hard.
Many data systems were not well set up to study pandemic recovery programs. This limits what can be learned.
There is a need for universal screeners in schools and internal research capacity.

Note. Research on Education Strategies to Advance Recovery and Turnaround (RESTART) Network staff edited sticky note statements for clarity.

Exhibit A-6. Sticky Note Statements Related to Stage 6: Aftermath (School Years 2023–24 through 2025–26)

Best practices
We should communicate research results in ways that inform and bring in families.
Communication and collaboration are important.
Findings and reports need to be well disseminated and accessible, even years beyond the disruption.
Institutionalize effective knowledge.
Mental health check-ins and support are needed for all.
Mixed-method approaches can and should be used to capture a more holistic picture of what is going on.
Researchers and practitioners need to communicate regularly and actually listen to each other.
We should share best practices and promising programs that worked at scale during recovery.
Crisis learnings
Factors to consider when learning from the aftermath include community context (e.g., poverty, rural), efforts to engage parents and community, student needs, and teacher well-being.
Being prepared is essential! Learn as much as possible from the aftermath to be better prepared for the next one.
How we learn today will be critical for responses during future emergencies.
Our efforts need to be maintained and refined based on data.
Our experiences are more similar than different, and we can learn from each other.
We must share how districts can effectively operate in times of disruption.
We should share any effective interventions or practices that should be scaled up or across systems.
Pandemic-specific learnings
Address the current problems exacerbated by the pandemic.
In many places, the pandemic widened pre-existing disparities.
Time for re-norming behaviors is needed (i.e., this is how we do school).

Questions for the future
How can artificial intelligence support in the aftermath?
How do we maintain the level of interventions and resources when funding goes away?
Might there be judgements about the value of additional money in schools based on Elementary and Secondary School Emergency Relief Fund impacts?

Note. Research on Education Strategies to Advance Recovery and Turnaround (RESTART) Network staff edited sticky note statements for clarity.

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