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Welcome to Our Winter Edition

By Paula Arce-Trigatti | NNERPP



We are excited to share with you this winter edition of NNERPP Extra! With this issue, we complete Volume 2 of our quarterly magazine – thank you so much for joining us for this second year. We hope you remain well and safe and join us in looking ahead with hope to the new year!

In keeping with the current top concerns in the world of education, the articles in this issue center, in large part, around topics related to the pandemic and to equity. Specifically, we share the following articles with you here:

- Research Insights: In the first part of a new two-part series, we examine research on the experiences of teachers as they adjusted to distance learning during the early phase of the pandemic.
- RPP Deep Dive: We share reflections on what it means to critically examine potential inequities in RPPs in a new series that considers how we can apply insights from Chicago Beyond's guidebook "Why am I always being researched?" to our work.
- Extra Credit: We share three main guidelines for creating effective data visualizations that can meaningfully impact decision making.
- Improving Improvement: We learn how an accelerated continuous improvement process and partnership model allowed for the formation of a partnership able to address urgent challenges posed by the pandemic.
- Research Headlines: We share a roundup listing all of our members' research from the past quarter.

Happy reading, and happy holidays! We look forward to seeing you again next year for Volume 3.

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NNERPP I Extra Online

Be sure to check out the NNERPP I Extra website if you'd like to explore this issue's articles (and more!) online.

About NNERPP

NNERPP aims to develop, support, and connect research-practice partnerships in education to improve their productivity. Please visit our website at nnerpp.rice.edu and follow us on Twitter: @RPP_Network.

By Nina Spitzley I NNERPP

A number of research-practice partnerships (RPPs) in NNERPP have conducted, compiled, or synthesized research to help education leaders and policymakers understand or address the unprecedented challenges brought about by COVID-19. In a two-part "Research Insights" series, we bring together a collection of studies from our members to learn more about the wide-ranging challenges experienced earlier this year as schools shifted from in-person learning to virtual learning at scale, with little to no preparation. In Part 1 of this series, we focus on the "supply" side of schooling by exploring three studies that examine the experiences of teachers as they adjusted to distance learning earlier this year, with each study



reflecting a different location, different context, and different student/teacher populations. Part 2 will focus on the "demand" side of schooling – the experiences and perspectives of students and families as they adapted to the new learning opportunities afforded due to the pandemic – in the next edition of NNERPP Extra to be published early next year.

Why This Series



Due to the emergence of the COVID-19 pandemic in the Spring of 2020, schools were forced to quickly respond, with most shifting instruction from in-person learning to online formats, accompanied by school closures more generally. The research projects presented here focus on that very first unprecedented and unplanned shift, highlighting teachers', students', and families' early challenges navigating these new learning environments. With the pandemic still on-going, we hope to take stock of important lessons or insights from these earlier experiences should the opportunity arise to apply this knowledge to current and possibly future conditions.

Overview and Context

Before we dive in, let's take a quick look at the three artifacts we'll examine here, the three partnerships that produced these artifacts, and some context surrounding the school closures in the states / cities of interest.

TABLE 1. A List of the Three Research Artifacts Included in this Article

PARTNERSHIP

- ▶ Tennessee Education Research Alliance: TERA brings together Vanderbilt University's Peabody College and the Tennessee Department of Education.
- ▶ Education Policy Innovation Collaborative: EPIC at Michigan State University is in partnership with the Michigan Department of Education, the Center for Educational Performance and Information, the University of Michigan and local school district leaders.
- Urban Education Institute: UEI at The University of Texas at San Antonio (UTSA) brings together a number of education stakeholders and community groups in the greater San Antonio. region, including UTSA, eight school districts, CAST network, Pre-K 4SA, SA Works, San Antonio Education Partnership, Raise Your Hand Texas Foundation, San Antonio Area Foundation, Baptist Health Foundation of San Antonio, Goodwill Industries of San Antonio, the City of San Antonio, UP Partnership, Café College, Alamo Colleges, and Texas Higher Education Coordinating Board.

ARTICI F

Teaching Through a Global Pandemic: COVID-19 Insights from the Tennessee Educator Survey

How Did Michigan Educators Respond to the Suspension of Face-to-Face Instruction Due to COVID-19?

Part 1 of the three-part "Teaching & Learning in the Time of COVID-19" study:

Early Challenges and Solutions from Teachers

Below, we provide a brief description of the context in which these studies occurred.

>>TENNESSEE:

Schools in Tennessee closed on March 16, 2020, and remained closed for the rest of the academic year. The Tennessee Department of Education recommended that districts offer distance learning. Schools planned to reopen for in person learning in the fall and to offer virtual learning as an alternative option.

»MICHIGAN:

Schools in Michigan were ordered to close on April 2, 2020 for the remainder of the academic year. Districts were instructed to provide distance learning and to outline initial strategies in Continuity of Learning Plans. Districts then detailed reopening plans and modes of instruction in extended continuity of learning plans, updated each month for the 2020-2021 school year.

>>SAN ANTONIO, TX:

Schools that had not already closed previously were ordered to close to in-person learning for the remainder of the academic year on April 17, 2020, with the goal of reopening in the fall, either in person or virtual, to be outlined in district reopening plans.

Research Questions

The following is a summary of the research questions included in each partnership's study:

>>TENNESSEE:

This study asked Tennessee teachers about their biggest concerns for students during the school closures that occurred earlier this year, the supports identified by teachers as most helpful for remote learning, teachers' most important sources of guidance during the school closures, and the ways in which teachers facilitated remote student learning.

>>MICHIGAN:

This study explored how Michigan teachers engaged with students during the Spring 2020 school closures, what challenges they faced, the most helpful resources and supports they used in transitioning to distance learning, and what concerns they had about the impact on their students of suspending face-to-face instruction.

>>SAN ANTONIO, TX:

This three-part study examined what worked and didn't work for teachers, students, and families during emergency distance learning in the Spring of 2020, how engaged students were during distance learning, and what other societal factors affected overall learning experiences. Part 1 of the publication, which we include in this article, focuses on teachers' early challenges and experiences with distance learning.

Research Methods

All three research studies conducted surveys. While they asked similar questions, sample sizes differed significantly across studies, the timeframe for each study was different, and of course, the locations were significantly different, with two of the studies focusing on a state-wide sample, while the third was city-wide.

In greater detail:

>>TENNESSEE:

The Tennessee Educator Survey, which is administered annually by TERA in partnership with the Tennessee Department of Education, was already in the field at the time of the COVID-19 school closures in Tennessee. The survey was then redeployed with new, COVID-specific survey questions. Between April 4 and May 1, over 25,000 educators (40% of Tennessee teachers and 44% of school leaders) responded to the questions, and over 10,000 teachers and school leaders provided open-ended comments to a question about the most important resources needed to support remote learning.

»MICHIGAN:

In contrast to the Tennessee survey, which surveyed all teachers in the state, the COVID-19 educator survey conducted by EPIC added to a survey already in the field for K-8 teachers and principals only (both in traditional public schools and charter schools across Michigan). A total of 8,565 teachers and 316 principals responded to the survey, corresponding to a response rate of 16% and 12%, respectively. Survey items were modeled on TERA's COVID-19-related questions from their 2020 Tennessee Educator Survey (see above), and was administered from May 6 to June 30.

>>SAN ANTONIO, TX:

Finally, the San Antonio study (with findings published in three different reports) surveyed teachers, students, and parents. Survey data were collected from May 22 to July 1 from representative samples of teachers, parents, and high school students (16 and older) for each of seven participating school districts (East Central, Edgewood, Harlandale, Judson, Northside, North East, and Southwest) as well as an eighth set of schools known as the Centers for Applied Science and Technology (CAST) Network for a total of 1,669 participants. For the purposes of this article, we focus on the 545 surveyed teachers.

- What Does the Research Show?



Here, we highlight some common themes that emerged across study findings. As always, we encourage you to explore each artifact in greater detail for more findings and insights specific to each location.

>>ACCESS

Teachers named students' access to remote learning as one of the most common challenges faced across all three studies, with teachers in Tennessee and Michigan reporting problems of access as being among their top concerns and/or challenges. Specific examples identified by teachers included lack of internet access, lack of access to devices, and technological problems. For example, 56% of participating teachers in Tennessee selected "barriers preventing students from accessing remote

learning" as one of their top three concerns. 78% of teachers and principals from the Michigan sample reported being either "concerned" or "extremely concerned" about barriers preventing students from accessing e-learning. In San Antonio, 27% of teachers surveyed named technology access and use as a major early challenge.

In terms of which barriers to remote learning were most salient:

• 83% of surveyed teachers and 90% of surveyed principals in Michigan said better internet access for students would be helpful "to a moderate or great extent", while 80% of teachers and principals said that access to a reliable home computer or suitable device would be helpful "to a moderate or great extent."

- In Tennessee, more than three-quarters of educators who responded to the survey identified **better internet access and/or reliable devices** for students as the most helpful supports needed for remote learning; this was especially common for teachers in rural areas.
- Teachers in San Antonio praised school and district efforts already undertaken to provide internet access and technology to their students: 35% of teachers identified these efforts to be among the most helpful actions that were taken.

From the San Antonio study, additional challenges related to a lack of internet access or access to devices were identified, such as students missing instructional time, teachers not being able to maintain or build relationships with students they can't reach, and the emerging digital divide deepening existing inequities.

With respect to the delivery of remote learning, the majority of teachers in both Tennessee and Michigan reported regularly sending electronic learning resources to students/parents, while significantly fewer teachers reported regularly sending physical learning resources or engaging regularly in virtual classes or tutoring. This reliance on electronic learning in delivering remote instruction likely exacerbated teachers' concerns about student access. In San Antonio, teachers indicated that their own unfamiliarity with online platforms complicated the delivery of remote instruction. Most teachers – close to 95% – had no previous experience teaching online.

Finally, in addition to challenges related to technological access described above, teachers in Michigan and Tennessee reported being highly concerned about students lacking access to crucial services such as **meals and counseling**.

>> ENGAGEMENT

Student engagement and attendance emerged as another major concern identified by teachers across all three studies, albeit to varying degrees:

- In Tennessee, this did not emerge as the most critical issue although teachers expressed concern and frustration over unclear district mandates and guidance regarding student attendance, it was not the top concern.
- In contrast, for teachers in Michigan, "keeping students engaged in schoolwork" and "student attendance" was named as the **greatest challenge** in transitioning to remote learning (82% and 81% of teachers, respectively, reported facing these challenges to a moderate extent or great extent).
- In the San Antonio study, 36% of teachers mentioned "student participation" as an early challenge, making it the most-mentioned challenge. They also reported that students were significantly less engaged during distance learning: About 60% of teachers said students turned in assignments less frequently compared to pre-pandemic schooling. Teachers indicated that establishing a social-emotional connection with students could help improve engagement.

>>GUIDANCE AND SUPPORTS

Finally, all surveys queried their respondents about the kinds of support that seemed to be most helpful in planning and facilitating remote instruction.

- Two-thirds of teachers who responded to the survey in Tennessee identified school or district guidance as one of their top two beneficial sources. Many teachers also reported seeking out general online resources as guidance, with 44% of teachers indicating they have sought these resources out themselves as a top source. Open-ended comments suggested that some teachers felt they needed more guidance and resources, and clearer and more consistent guidelines about their responsibilities for remote learning and expectations around parent/student engagement. In particular, some teachers commented on a need for more guidance to support certain student populations, such as students with severe disabilities and English learners. In terms of supports that teachers felt their students needed, internet access and access to crucial services were named, as referenced above, as well as emotional and mental health support.
- The Michigan study found that surveyed teachers generally did not find guidance or resources from their schools and districts to be as useful as resources from their colleagues or online resources they sought out themselves. Three additional supports for online instruction were identified as helpful by teachers in Michigan: virtual resources that provide content for students, training for teachers on effective digital distance learning strategies, and ready-made lessons.
- When asked about helpful supports during pandemic learning from their schools or districts, teachers in San
 Antonio pointed to effective improvement of online access through the mass distribution of laptops, devices,
 and hotspots, as mentioned previously, and also named technology trainings, professional development, and
 sample lessons as especially helpful. On the flipside, teachers reported needing clearer, enforceable guidelines
 for student grading and participation, including guidelines around tracking participation.

Implications and Recommendations

There are at least four takeaways to consider from the three studies discussed here:

 First, weak broadband infrastructure and lack of access to devices are a major barrier for students trying to access remote instruction, and for teachers trying to provide it. Both for the current crisis and for future events that might necessitate remote schooling, this digital divide needs to be bridged. Delivering remote learning through more physical learning resources might be helpful.



- Second, other inequities also need to be addressed. Teachers reported that some groups of students were harder to reach and/or teach than others, including economically disadvantaged students, students with disabilities, and English Learners. Thus, teachers need more resources and tools for effectively instructing these students online.
- Third, teachers / principals struggled with a lack of clarity and guidance around what was expected of them and how virtual learning works which is not surprising given the little preparation for and unprecedented nature of this sudden shift to remote learning. Now that schools, districts, and teachers have had more time to assess what works and what doesn't, it should be easier to develop clearer sets of expectations and training that teachers need.
- Finally, with respect to student engagement and attendance, better / easier technology access, more tools to help educators meet students' social-emotional and individual needs, and clearer expectations and guidelines will also help.

In Practice

Because each of the studies highlighted in this article were produced as part of an RPP, they are all specifically meant to inform the work of the practice-side partner(s) in each RPP. In this section, we briefly highlight how findings have impacted practice so far.

>>TENNESSEE:

The survey findings on educators' experiences during COVID-19-related school closures helped the Tennessee Department of Education refine its efforts to support schools and teachers in remote learning planning: The department has formed various partnerships to help provide digital training to educators around using and implementing remote learning, to provide classroom lessons to young students – for example, through lessons being aired on PBS – and to produce remote instruction toolkits and guidance.

»MICHIGAN:

The survey results were shared broadly with stakeholders across the state to support conversations about what resources and guidance were needed for schools and districts. The initial executive orders on school building closure were followed by legislation to direct public education under "extended COVID-19 learning plans" in the 2020-21 school year. The Michigan Department of Education along with key education associations across the state have developed tools to help districts plan effectively to ensure the provision of education to all students, and support districts to fulfill the requirements of the legislation around meeting educational goals for student progress.

>>SAN ANTONIO, TX:

Superintendents from each of the eight surveyed school districts have engaged with and widely distributed the UEI reports on distance learning. School leadership teams and boards have used the findings to improve policies and practices. Very specifically, leaders from CAST schools, one of the systems included in the survey research, used the findings during the summer and fall of 2020 in an UEI-led Improvement Science planning project to inform and shape a number of programs to better engage students and educators during ongoing distance learning:

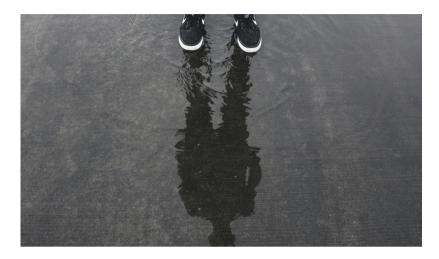
- CAST Schools launched a comprehensive summer paid internship program where students co-created future project-based lessons with CAST educators.
- Additionally, a CAST Summer Studio was launched in partnership with local arts groups and teachers to guide
 incoming freshmen through a process of self-identity and artistic expression.
- Finally, a new initiative, the CAST Taking a Stand Initiative, was created to connect students and educators to discuss and develop an outline for how the CAST network will tackle racial injustice and inequities in San Antonio.

Coming Next

We will turn to students' and families' experiences with online learning during the early phase of the pandemic and examine how these compare to teachers' experiences and insights in Part 2 of this Research Insights series, coming in the next edition of NNERPP Extra early next year. We hope to explore a more complete picture of the challenges and needs from all participating stakeholders with this effort – which will be crucial for improving supports and quidelines going forward. Stay tuned!

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By Paula Arce-Trigatti and Nina Spitzley I NNERPP



Research-practice partnerships (RPPs) have great potential, and often the explicit goal, to improve a number of equity-related dimensions in education. Most often these include student focused aspects of education such as increasing equitable opportunities or improving overall outcomes; those who choose to participate in RPPs, however, also inherently care about producing research in more equitable ways as well. This collaborative aspect of partnerships, which requires researchers and practitioners to approach their roles in new ways, addresses head-on the historical imbalance of power that has generally characterized the

production of research knowledge: In RPPs, research questions are jointly negotiated between "R" and "P" partners, bringing diverse forms of expertise from a variety of stakeholders to bear on pressing problems identified by practice-side partners. Although RPPs--by construction--are very likely to foster equitable participation in the generation and use of research, it is not a guarantee. RPP processes are almost certainly prone to the same unintended biases shaping other well-intentioned endeavors, while efforts to address unequal power dynamics can still present challenges, in spite of partnerships actively seeking to rectify these imbalances.

At NNERPP, conversations about better centering equity in all areas of partnership work are not new: For example, it was the main theme of our 2019 Annual Forum (i.e., "The RPP Journey: Learning Together in Pursuit of Equity and Excellence") and featured prominently in a number of sessions at this year's meeting as well under the theme "RPP Effectiveness: Adapting and Advancing Towards a New Normal in an Era of Disruption". In addition, members and friends of the network have also put forth new thinking and guiding tools on how to work towards equitable partnerships in two previous NNERPP Extra articles (see here and here).

These conversations have gained even more momentum this year as the pandemic has deepened inequities in education and the calls for racial and social justice have become ever more urgent. In partial support of these priorities, we invited a team from Chicago Beyond, an impact investor working to provide more equitable access and opportunity for Chicago youth, to facilitate an introduction to their guidebook, "Why am I always being researched?", for one of the sessions hosted at this summer's Annual Forum. The guidebook is a terrific learning resource that presents a collection of seven inequities that get in the way of truth when conducting research, as identified by Chicago Beyond through accumulated lessons and knowledge gained during their experiences funding community organizations and research over the years. The guidebook also explores how these inequities – which include access, information, validity, ownership, value, accountability, and authorship (see Table 1 for a brief overview) – can be opportunities for change.

Table 1. The Seven Inequities Identified by Chicago Beyond's "Why am I always being researched?"

ACCESS

• "Could we be missing out on community wisdom because conversations about research are happening without community meaningfully present at the table?" (p. 7)

INFORMATION

• "Can we effectively partner to get to the full truth if information about research options, methods, inputs, costs, benefits, and risks are not shared?" (p. 7)

VALIDITY

• "Could we be accepting partial truths as the full picture, because we are not valuing community organizations and community members as valid experts?" (p. 7)

OWNERSHIP

• "Are we getting incomplete answers by valuing research processes that take from, rather than build up, community ownership?" (p. 7)

VALUE

• "What value is generated, for whom, and at what cost?" (p. 7)

ACCOUNTABILITY

• "Are we holding funders and researchers accountable if research designs create harm or do not work? (p. 7)

AUTHORSHIP

• "Whose voice is shaping the narrative and is the community fully represented?" (p. 7)

Our session at the Annual Forum with Chicago Beyond was so insightful that we knew we needed to dive deeper and keep working through these important ideas as a community. In support of this effort, we hosted a virtual brown bag in late September with our members to re-introduce the guidebook and begin a series of critical conversations about what it means to apply the lessons identified by Chicago Beyond to an RPP context. From the collection of seven inequities, we focused on validity and access first, as they seemed to be two of the most foundational dimensions RPPs must consider when embarking on collaborative research. During the brown bag, we asked all those on the call to take a reflective look at their own RPPs and think through what it would mean to foster partnerships that attended to both the validity and access considerations defined above.

In this first contribution of a multi-part series on applying Chicago Beyond's insights around the seven inequities to RPPs, we share back a synthesis of the ideas and suggestions that surfaced during our conversation. Our intention with these pieces is to capture and share-out our initial thinking on these topics; we hope to iterate on these conversations moving forward, and to especially involve more voices and perspectives as we work through these critical dimensions together.

»Reflections on Validity

As noted in Table 1, the Chicago Beyond guidebook includes the following reflective prompt on validity: "Could we be accepting partial truths as the full picture, because we are not valuing community organizations and community members as valid experts?" (page 7 of the Chicago Beyond guidebook). The three key words in this prompt include "valid", "expert", and "community" – we take up a more detailed look at these with our own set of reflective questions that we share momentarily. Before we get to those, however, we pause to first think more carefully about what the reflective prompt means specifically for RPPs. In our case, we might ask quite simply:

• Whose knowledge do we value?

As is often the case in partnership formation, deciding on personnel is a critical first step--which means if we don't get this part right, all of the partnership steps that follow will most certainly be fraught with bias. By asking ourselves "whose knowledge do we value?", we create the opportunity to be more thoughtful about which groups are invited to participate in the RPP, what types of expertise are deemed "valid", and who gets to determine the direction of the research. This is why from an RPP standpoint, validity is perhaps the most important inequity to consider – we make decisions, whether conscious or unconscious, about whose knowledge we value right from the beginning of the RPP launch process.

Returning to the three key words from the initial prompt, here are three "remixed" questions we might ask ourselves in terms of the RPP context:

- Who counts as a "partner" in the RPP?
- Who is considered a "principal investigator" (PI) if there are grants involved?
- Who is considered an "expert"?

Recognizing that oftentimes the decisions to the above questions might be heavily influenced by a multitude of factors beyond any one individual's control, we include the additional questions in order to probe further:

- Who gets to decide the answers to the above guestions?
- How do funders influence these choices?
- How does your home organization influence these choices?

For our virtual brown bag in September, we considered each of these questions with the group, asking members to reflect on the questions themselves and share any reactions or feedback that emerged for them. There was some initial critical reflection by the group on the role equity itself played in the generation of the "knowledge" or "evidence" we start with (i.e., in terms of whose knowledge we value) – that is, are we beginning our conversations with groups whose research / knowledge / evidence base is already fraught with equity issues? Another participant suggested there is an important interaction between "whose knowledge" is considered and "what knowledge" it is that they bring – i.e., we don't necessarily expect to value everyone's knowledge "equally", but rather, "equitably", or where they have greater expertise and experience.

In terms of who counts as a "partner" in the RPP, the group discussed the difference between considering these individuals "subjects" or "allies" – that is, are we mining their experiences or inviting them to truly collaborate as equal partners? One participant additionally cautioned the group to ensure we view our communities as humans with full-lived experiences and agency and choice.

The conversation then turned to a critical look at the concept of a PI, applicable when there is a grant involved in supporting the partnership (alternatively, when there is not an external factor dictating leadership roles, the equivalent question might be: who is named to the leadership of the RPP?). This led the group into a discussion about definitions: How do we define "value," how do we define "experts", and how do we define "PI"? For example, is the PI the person who runs the project, the expert, the person who manages the RPP, all of those things, etc.? Depending on how you define it, some partners may actually prefer not to take on that role. Indeed, there often is no prestige to being a PI for education leaders on the practice-side of the partnership, whereas being named a PI is generally very important in academia. Yet if the PI is the one calling the shots in a research project, an inherent power imbalance exists even if p-side partners have less vested interest in the position as such.

Additionally, participants agreed that RPPs often have limited autonomy over these questions, bringing us back to how organizations or funders impact these considerations. For example, rules in research grants and those set forth by universities

often restrict who can be named a PI. On the practice side, there is another set of concerns entirely: For one, many practice-side organizations are taxpayer funded, which directly shapes incentives that may not align with being named a PI. Furthermore, practice-side organizations may be subject to significant instability in terms of leadership and personnel, which is also not conducive to being named a PI. As leadership changes, priorities change – the person that gets to set the direction for research activities can change frequently, which is typically unfavored from a grant funding perspective.



Taking into account all of these considerations, participants suggested a number of valuable ideas for proceeding:

- With regards to setting up the RPP leadership, participants identified a need to purposefully create structures within the RPP to encourage shared, collaborative, and equal decision making opportunities among partners, even if individuals are not officially named in those roles via a formal grant. For example, this might include naming a practice-side partner as an associate director of the RPP or co-director of the RPP, regardless of where the money flows to.
- Participants also suggested the importance of having an open mind as to who an expert might be, and moreover, being thoughtful about seeking out these potential experts. One way to do this is to first map out all of the actors or individuals in the ecosystem that encompasses the locality your partnership is focusing on; then, spend time understanding the varied perspectives each brings to the problem your team is trying to address. By advancing in this manner, you potentially avoid limiting who is considered an "expert" via some hidden or arbitrary measure.

- A reflective question you might ask after an initial identification of expertise to offer a check on unintended biases: How representative of my community are the partners or stakeholders I have invited to participate?
- Additionally, participants on the call noted that the eventual work of the partnership itself will depend heavily on who you've identified as an "expert" or "partner", and this will be important to consider upfront as the partnership forms. For example, are district research leaders considered your primary p-side partners? Or school principals? Or students? What would change, in terms of the production of knowledge, the research questions asked, and the actionable results developed, depending on which of these groups you ended up naming as "partners" or "experts"?

>>Reflections on Access

Although we intended to consider "validity" and "access" in somewhat separate reflections within the conversation, we realized as a group that they are quite connected. In the synthesis that follows, you'll likely notice some recurrent themes that carry over from the validity discussion.

In terms of "access," the Chicago Beyond guidebook poses the following reflective prompt: "Could we be missing out on community wisdom because conversations about research are happening without community meaningfully present at the table?" (page 7 of the Chicago Beyond guidebook).

Applying this prompt to RPPs, we focus in on the phrase "at the table" and pause to reflect on:

Who is at the RPP table?

While the "validity" inequity centers on value of expertise or knowledge, this inequity invites us to think more carefully about representation and voice. As we ponder "who is at the table" in our RPP, we can again start right at the beginning in the formation phase of a partnership and consider who is represented there, and who is not. In this regard, "access" may perhaps be even more fundamental than validity when embarking on the work.

Some additional questions we posed to the group to probe further:

- How diverse are your partners or stakeholders?
- Who is not meaningfully included in your RPP conversations?

And as we did before, recognizing that the approach to these questions may itself be subject to unintended biases, we also ask the following questions:

- How do you know whether or not you have the "right" people at the table?
- What if a partner does not wish to include additional voices in the work?
- Who or what constrains meaningful engagement with multiple stakeholders?

In the ensuing discussion, the group brought two main observations to the forefront: (i) What an equitable representation looks like with regards to who is "at the table" might depend and differ based on the research project, and (ii) it is important to also reflect on your own team and who is or is not represented there.

Several NNERPP members observed that the nature of a research project and the questions it seeks to answer shape the kind of representative expertise that is needed. From there, it is important to intentionally seek out experts whose knowledge can then be leveraged based on the research content. This echoes what the group mentioned earlier with respect to the validity discussion; the additional insight here is noting that different groups of stakeholders may serve as important partners depending on the nature of the project, the question itself, or even where your RPP might be in terms of the research process. One participant described this idea by envisioning a stream, rather than a table, that people get to join by going in and out as appropriate -- what is most important is that all groups have access to the stream itself. Another participant wondered how we can make access a two-way street, being careful to not default to always having one side or person consistently appointing who gets invited to the table / stream. For example, does the process or opportunity for reaching out to partners look different based on whether your home organization is on the "R" or "P" side?

The group also discussed the need to critically examine who you yourself are bringing to the table, and reflect upon the extent to which your home team is diverse. Indeed, determining the size of the table, who gets to sit at the table, and who gets to meaningfully participate at the table are all decisions that will be made by those in power. How can the partnership make these decisions more equitably, taking into account the inherent limitations to participation that may restrict some groups from having their voice heard? Related to this, participants pointed out that RPPs might be able to leverage various boards or advisory groups to get more consistent input from a broader constituency.

As the conversation came to a close due to time, one final thought brought up by the group had to do with RPP training, which is yet another aspect of access we can consider. For example we might ask, who are we training to do this type of work? Some universities are beginning to offer RPP-related course work (e.g., Stanford University, Rice University, University of Washington, and University of Colorado, Boulder, to name a few), but this is not a widespread phenomena, which suggests that only a small number of people have access to graduate training that exposes them to RPP work. Furthermore, as far as we can tell, there are no opportunities for those outside of academia to train in RPPs (note that this is something NNERPP is currently working on developing). These pipeline issues will require further thought and action if we are to address head-on some of the access issues related to joining an RPP.

In Conclusion

Although we had just a short 60 minutes for the September brown bag, we ended up having a rich discussion on "validity" and "access", with many participants contributing incredibly valuable viewpoints to the conversation. As mentioned earlier in this piece, we hope this is merely the start of many more conversations to come as we continue to ponder together and refine our thinking on how best to attend to several inequities that may be unintentionally driving partnership work. We are excited for our proximal chat with the group, where we will take on "information" as the next inequity.

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Visualizing Data for Meaningful Impact on Decision Making

Based on tips from Anneli Joplin

What makes for impactful data visualizations? How do those visualizations help facilitate effective dialogue with practice-side partners about research findings that affect decision making?

These are important questions for many of us who work in research-practice partnerships (RPPs). At this year's NNERPP Annual Forum, our annual conference which brings together our members, funders, and relevant policy and advocacy groups, we were joined by data viz expert Anneli Joplin for a highly popular, much praised session that addressed these exact questions. During the session, Anneli shared many practical tips and concrete examples with Annual Forum participants. There was so much interest in the topic within the NNERPP community that following Anneli's session, we launched a NNERPP Data Viz Club, an informal club for NNERPP members to share, discuss, and receive feedback on data visualizations in monthly virtual meetings.

In order to keep these conversations supported, we share with you this edition of "Extra Credit", where we present three main takeaways from Anneli's presentation that we hope are beneficial to those working in RPPs, or those in the broader education field that want to learn more about designing meaningful data visualizations.

Before we start, a bit more about Anneli: Anneli earned her PhD in chemistry at Rice University, at which time she discovered that her favorite part of chemistry research was visually expressing complex ideas. She has been teaching these skills since then. Following her PhD, she worked as Instructor of Visual Communication & Design at Rice University, and now is an Instructional Designer at Camden Property Trust. You can learn more about her here and find her on Twitter here: @AnomalyJoplin.

Throughout Anneli's presentation at the NNERPP Annual Forum, the following three themes stood out; these might be particularly helpful for those seeking to design better and more useful data visualizations:



1. Understand how your viewer absorbs information.

Data visualizations are effective when designers take into account how human memory and information processing functions. Your viewer will better and more quickly understand the main idea behind your data visualization and is more likely to act on that information later if you have designed it in a way that is conducive to how the human brain processes and remembers verbal and visual information. The challenge is that the working memory's capacity is actually quite limited, so your overall goal, says Anneli, should be to make its job easier. This basic approach to data visualization can make a big difference in your data visualization efforts.

»To learn more about working memory, here is a place to start.

2. Then, make it easier for your viewer to absorb the information in your visualization.

Based on an understanding of human cognition and memory, there are several design principles that facilitate the brain's job in processing and remembering information contained in a data visualization.

Among the principles that Anneli shared here, the following stood out to us for ease of integration (i.e., no fancy data viz programs needed!): Use horizontal text in your data visualizations, which makes it easier to process and read; reduce the distance between labels and data sets and/or between the data sets you are comparing so there's less information for your brain to remember; and use symbols instead of labels/text in your data visualizations which can often be processed faster than text.

Visualizing Data for Meaningful Impact on Decision Making, continued

Such symbols should be universally understood, nonambiguous symbols. Here at NNERPP, we often use Canva to find icons/symbols.

Anneli also recommended taking advantage of "preattentive processing": instantaneous and automatic processing, which helps the brain make sense of data visualizations much faster without taking up much of the brain's limited processing and memory capabilities. For example, principles of pattern recognition can be especially useful for data visualizations with different groups of data or items of comparison. Of the pattern recognition principles that Anneli shared, two stood out to us as especially easy to integrate into any such data visualization: Proximity and similarity. The human brain automatically assumes that objects that are close together are grouped and that objects that share obvious visual features (such as color or shape) are grouped. These two simple principles can help you create visualizations that are easier and faster to process.

»To read more about preattentive processing and preattentive visual properties, here is a place to start.

3. Remember: Balance is key.

Anneli shared many excellent design principles that help viewers make sense of data visualizations and better remember the information, which is important if we want our visualizations to impact decision making. However, she also cautioned against using too many of these principles at once, reminding us that balance is key. As a general rule, important information should be elevated and extraneous information should be removed or deprioritized. For example, consider removing gridlines in a graph if they are not needed for clarity, or make the data stand out more by using different weights for your graph versus your gridlines. Generally, strong visuals should be reserved for things that really matter and should add meaning instead of introducing noise. For example, when using the similarity principle of pattern recognition mentioned above, use visual cues to enforce the same grouping only (e.g. red squares and blue circles) instead of introducing multiple layers of groupings (e.g. a combination of red and blue circles as well as red and blue squares), and consider using no more than two visual cues (in this example, color and shape).

Lastly, a note about equitable data visualizations

Equity in data visualization is hugely important – and complex. There are many questions designers should ask themselves, including: "Was the data collected in an inequitable way?", "Does this visualization obscure the root cause of this data?", and "Does this visualization represent white groups as the norm and non-white groups as the 'other'?". If the answer is 'yes' to any of these, the data visualization is not equitable.

»For a more in-depth examination of what equitable data visualization and data use looks like, Anneli pointed us to resources from Heather Krause, particularly her lecture "How Not To Use Data Like a Racist."

Additional resources

The main takeaways we shared here are just a taste of Anneli's rich knowledge and excellent tips for designing impactful data visualizations. Luckily, Anneli also left us with some excellent recommendations for additional data viz resources:

- Stephanie Evergreen, data visualization and design expert:
 She has a fantastic website and blog and runs the
 Evergreen Data Academy. You can connect with her on
 Twitter here: @evergreendata
- Ann K. Emery, data visualization speaker and designer:
 Check out Data Depict Studio, where she offers
 professional development through data visualization
 online courses, virtual workshops, on-site workshops, and
 conference keynotes, and her blog. You can connect with
 her on Twitter here: @AnnKEmery
- The Data Visualization Society, an organization dedicated to fostering a community for data visualization professionals worldwide. Membership is currently free. Explore their website here and find them on Twitter here: @DataVizSociety

Effective data visualization is a big and complex topic – even considerations such as which colors to pick and the uses, advantages, and disadvantages of different types of graphs are complex on their own. Yet, the three takeaways we share here from Anneli's (much more in-depth) presentation are foundational for any type of graph or visualization displaying any kind of data, and we hope these present a helpful starting point. At NNERPP, we look forward to many more conversations and explorations around impactful data visualizations that help RPPs achieve their goals.

By David Hersh I Proving Ground

This is the third installment of Improving Improvement, our quarterly series focused on leveraging the power of research-practice partnerships (RPPs) to build schools', districts' and states' capacity to improve. In our last installment, we shared lessons learned from working with existing partners during the Covid-19 crisis. Many of these lessons could be considered best practices for RPPs in any context.



In this installment, we want to build on those lessons with a discussion of a new partnership created expressly in response to the pandemic. In June, we partnered with Impact Florida—an organization that convenes networks of Florida districts to recognize, support, and scale great teaching practices— to support four districts in addressing challenges made more urgent by the pandemic. As Impact Florida's technical assistance provider, Proving Ground provides the framework and tools necessary for districts to choose a problem of practice, identify and develop potential solutions, pilot and test those solutions, and make outcome-enhancing

decisions based on the test results. The urgency of the moment meant condensing what we normally do in about 18 months into less than half that time. And we had to do it while minimizing the burden on already time- and attention-strapped district partners. While we are not ready to conclude that this accelerated model works, preliminary feedback suggests the modifications made for this moment will help us better serve partners in the future.

A More Responsive Research Infrastructure

Our collaboration with Impact Florida necessitated that we combine our process with new flexibility to serve the districts' urgent needs in the face of Covid-19. Our partnership model has always been focused on serving practitioners' needs without sacrificing the rigor of the evidence we help them generate and use. Striking that balance, however, generally involves two quality safeguards that limited our ability to use our model to address urgent needs. First, we restrict the outcomes we measure and, by extension, the problems our partners can address. Using outcomes on which we have done extensive R&D and with which we have extensive experience makes it easier to manage the process and ensure the rigor of results. Second, we use a thorough onboarding process that includes ingesting districts' data into our secure warehouse and gradually guiding district staff through the entire process over the course of roughly a year. It is the longest part of the onboarding process, but it enables us to do repeatable rapid-cycle evaluations (our partners can run 4 rounds of RCTs in 2 years, for example).

Impact Florida's goal was to select a cadre of Florida districts and help them address one of the many urgent challenges posed by the pandemic this year. For the work to be relevant, the cadre would need to be able to choose which challenge to address. And they had to be able to implement a strategy in the fall after starting work in earnest in August. Thus, when we started conversations with Impact Florida about supporting some of their partner districts, our decision was really about whether we could reengineer our process to maintain quality without the two safeguards outlined above. We decided to try. The lesson is that it appears doable if we engage district partners early and often, so they are informed of the implications before making all key decisions.

Becoming (Mostly) Outcome-Agnostic

The path to selecting outcome measures began before any of the four districts in the cadre officially signed on. Impact Florida identified six districts from its network of 13 in May. We then shared an overview, including expectations for piloting and testing, with all of them. By late May the pool narrowed to four districts, and after individual conversations with each district in early June, the Covid Recovery Cadre (CRC) was born. At that point the CRC had not yet decided on its focus area, but Impact Florida had surveyed them along the way to learn about their interests. This, and the grant requirements, let us narrow down to a few options: Algebra, HS ELA and/or SEL. In late June, we facilitated a session with all four districts to help them decide where they would focus. We included in the factors they should consider the research implications –what we would use to measure impact, how pilots might be likely to play out– alongside the usual questions of impact, effort, etc. The four districts unanimously chose Algebra as their focus area, specifically focusing on students who were in Pre-Algebra in 8th grade and Algebra 1 in 9th grade. But they were also convinced that, in the current environment, it was difficult to separate SEL from academic outcomes. We agreed to try to measure SEL outcomes as intermediate outcomes if it proved a key part of their theories of action – something we would not know until they completed a root cause analysis and chose their interventions.

This was Proving Ground's first cycle using Algebra or SEL as an outcome, so it required us to become comfortable with the unknown. We had not seen partners' Algebra or SEL data, and there were no prior years' end of course exams (EOCs). This year's EOCs are tenuous and will not give us results we can use on our partners' timelines (we aim to provide results before budget decisions for the following year get made). We knew only that all four districts administered Algebra benchmark tests – albeit 4 different ones including 2 that are in-house– and were willing to administer additional SEL instruments if needed. Our analytic team therefore did some quick pressure testing with a dataset from one of our partners to give the thumbs up that we could make it work. We nevertheless launched with far less certainty about measurement instruments than we ever had in the past. It put a great deal of pressure on our analytic team to be adaptive as the data came in. We had to be willing to problem solve measurement challenges quickly. This was, therefore, an exercise in getting comfortable with uncertainty and trusting the team's skills and talent. But it was also an exciting intellectual challenge for those who embraced it. And, once again, we were very explicit with our partners about the challenge and uncertainty. They went ahead as aware as we could make them of the risks involved.

Cutting Onboarding and Development Time by 75%

Proving Ground's ordinary onboarding and initial development period lasts around 12 months. It encompasses two related foundation-setting steps: data processing and learning the continuous improvement process while developing the first intervention. Making this new accelerated timeline work required substantial modifications to both.

In a traditional engagement, we ingest partners' data into our secure warehouse. On average, this takes around six months, but in some cases can take longer. One driver is setting up data transfers; the signing of data sharing agreements (DSAs) can take some time with two bureaucracies involved. The bulk of the rest of the time is spent on the back and forth it takes to understand partners' data – even in something standard like attendance there is a lot of variation in coding and business rules-and address errors. Once that's done, our team writes the scripts necessary to automate future ingestion and cleaning and the code to process all files into something we can analyze. For the CRC, waiting six months to be ready to process data would not work. We got around the problem by both changing how we handled the data and by modifying the rest of our process so that it wasn't dependent on data at as early a stage.

The biggest change to data processing was deciding to forego ingesting the data into the warehouse. Because this is a one-year engagement with one improvement cycle per partner, the benefit of warehousing the data was substantially outweighed by the upfront cost. We instead processed the data directly, essentially replacing SQL code with Stata code to clean and stitch data sources for analysis. We also invested energy up front figuring out the bare minimum data we would need to measure impact. This had the side benefit of reducing the data requested of partners at a time when staff were generally overwhelmed. Finally, we set expectations from the beginning that we would need DSAs signed on a much shorter turnaround than normal.

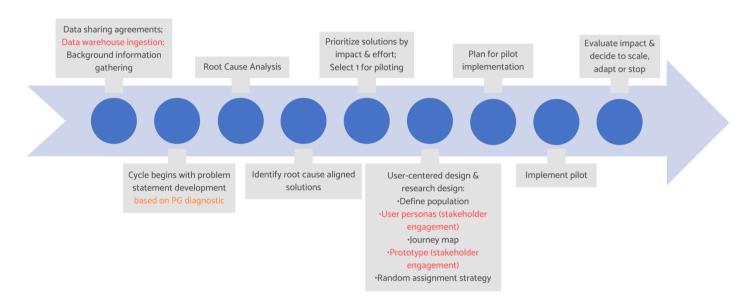


Figure 1: Changes to traditional process to create accelerated process for Covid Recovery Cadre (changes for CRC highlighted in orange, cuts for CRC highlighted in red)

Modifying the continuous improvement process to be less dependent on data in the initial stages coincided with shortening the overall time it takes to develop the first pilot. In a traditional engagement, developing the first pilot takes the better part of a year because we start with a data diagnostic we produce for partners and because we are laying the groundwork for future improvement cycles. Waiting for our data diagnostic means we cannot begin developing problem statements and doing the root cause analysis until we have the DSAs signed, data cleaned and processed, and diagnostic charts and tables produced and shared with partners. Even without ingesting data into the warehouse, we would have had to delay starting the process until around September, a non-starter when the goal was to launch interventions in the fall. We got CRC partners started earlier by having them do their own data diagnostic using a template we created for them. Because we did not need their data, this started almost immediately, happening concurrent with the signing of DSAs and before the transfer of any data. It was a fivemonth head start.

We still had a long way to go to shave the rest of the timeline down, however. As with cutting out ingestion into the data warehouse, a key change was enabled by the fact that this was a one-year engagement. In our traditional engagements, our goal is not just to help districts identify what works and what does not for a given problem but to ensure they can sustain the work after we are gone. It is why our traditional engagements are three years and encompass multiple improvement cycles. And it means not just guiding partners through the process but building their capacity along the way. It also means diving

deep at all stages of the process to generate learnings that we will use in future cycles. Because the goal here was to figure out what works and what does not for an urgent need, we could deprioritize capacity building to an extent. So, we cut several steps from the process and within each step, covered only the minimum needed for this cycle. We also did some legwork for partners that we would not have done if we were building capacity, like pre-populating portions of templates.

The biggest shortcuts came around intervention design. Traditionally, this process involves substantial stakeholder engagement and begins with partner brainstorming. For the CRC, we eliminated the former (as noted below) and used the latter only as an optional supplement to the core step of matching root causes to evidence-based intervention options. To foster that matching, we produced a self-guided tool that allowed districts to enter root causes and see a curated list of aligned evidence-based intervention options.[1] While we had been developing the idea for this tool for a long time, the CRC pushed us to create a lower fidelity working example to make it available for these partners. Its use substantially cut the time to identify a well-developed root-cause aligned solution. It also led to all partners having design and implementation support from the creators of the interventions they selected (we acted as the matchmakers). As a result, the design and implementation planning time were cut substantially as well.

Why We Are Hopeful this Model Works

The main reason we are hopeful that this model is viable is because of the success that we have seen. It is November and all four partners are implementing their interventions and on track to have evidence they can use to decide whether to scale, adapt, or drop them in the spring. Two partners identified growth mindset as a key root cause of students' challenges with Algebra and are piloting PERTS Growth Mindset modules. One identified teacher practice as a root cause and is piloting MQI Coaching. The fourth identified prerequisite skills deficits as a root cause and is piloting tutoring using SpringMath.



Beyond the fact that partners are so far on track, we have seen benefits to some of the changes that will lead us to adopt them into our traditional model. One example is that letting go of the reins on the diagnostics seems to have increased partners' engagement with their data and led to richer conversations as they diagnosed their challenges and developed clear problem statements. While we will still produce diagnostics for other uses, in the interest of capacity building, we will start all partners with a self-diagnostic template. Another is more intentionally connecting partners with implementation support from intervention creators where feasible.

Key Qualifications

While we are encouraged by the progress our CRC partners have made and will adopt several features of the CRC regardless of the result, it is important to qualify that some of the success depends on conditions that may be hard to replicate and some of

the changes involve tradeoffs that are only worth making in the face of the kind of urgency the pandemic has created. One of the conditions that would seem hard to replicate but may be key to success in this accelerated model is the unique commitment of our four partners and their existing relationship with Impact Florida. Their commitment meant we knew they would do what was necessary to make this work – like doing the self-diagnostic on a short turnaround – despite their extremely limited time. The latter meant we were piggy backing on the goodwill and trust Impact Florida had built up when partners opted to continue in the face of the risks posed by so many modifications.

Similarly, not all the modifications are desirable beyond urgent, exceptional cases, especially the decision to drop the stakeholder engagement steps. These steps inform intervention selection, design, and implementation planning and were dropped both for the sake of time and because the pandemic limited the availability of stakeholders. While it is entirely possible for interventions to be successful without it, it is nevertheless a substantial missed opportunity. Stakeholder engagement is not just a means to an end, rather, it leads to improved design and implementation along with improved relationships with stakeholders and a better understanding of those we work with and serve. It will therefore remain a key part of the Proving Ground process going forward, regardless of the outcome of this project. In fact, we are building out plans to provide CRC partners with future opportunities to build stakeholder engagement capacity. But if this project succeeds, we at least know it is possible to adjust our process to respond to urgent needs; it is a tradeoff we would make only under urgent circumstances.

Looking Ahead

By our next installment of Improving Improvement, we should start seeing results trickle in from our 50 or so partner districts running RCTs this fall. Stay tuned for more lessons learned from the results of pilots implemented during the pandemic.

We are also always open to additional suggestions for topics for future editions of Improving Improvementl. Reach out to us with any questions you have about our networks, continuous improvement process, or ideas you would like to see us tackle.

• David Hersh (david_hersh@gse.harvard.edu) is Director of Proving Ground.

^[1] Contact us if you are interested in a brief demo.

Research Headlines From NNERPP Members: Last Quarter

ARTS EDUCATION

EDUCATION ESEARCH ALLIANCE FOR NEW ORLEANS

examines access to arts education

ATTENDANCE

MADISON EDUCATION PARTNERSHIP examines

- -- Absenteeism
- -- The impact of sleep and circadian factors on middle school attendance

CAREER AND TECHNICAL EDUCATION

REL SOUTHWEST

examines career and technical education programs and postsecondary outcomes of CTE students

COMMUNITY SCHOOLS

GARDNER CENTER

explores implementation of full service community schools in Oakland

CONTINUOUS IMPROVEMENT

REL NORTHEAST & ISLANDS

creates continuous improvement toolkit for schools and districts

COVID-19

CHICAGO ALLIANCE FOR EQUITY IN COMPUTER SCIENCE examines equity in remote learning plans

EDUCATION POLICY INNOVATION COLLABORATIVE examines

- -- Instructional delivery amid COVID-19
- -- The guidance states issued during the covid-19 pandemic related to third-grade reading policies

RESEARCH ALLIANCE FOR NEW YORK CITY SCHOOLS updates overview on virtual and blended learning

EARLY CHILDHOOD EDUCATION

BOSTON P-3 RESEARCH-PRACTICE PARTNERSHIP examines

- -- Classroom quality
- -- Summer learning between pre-k and kindergarten

EDUCATION RESEARCH ALLIANCE FOR NEW ORLEANS examines admissions priority

HOUSTON EDUCATION RESEARCH CONSORTIUM examines factors that drive parental pre-k choice

EARLY CHILDHOOD EDUCATION, continued

MADISON EDUCATION PARTNERSHIP

examines the transition to kindergarten

NYC EARLY CHILDHOOD RESEARCH NETWORK examines

- -- Early care and education for infants and toddlers
- -- Equitable and high-quality early learning practices
- -- Preparation of infant-toddler workforce
- -- The impact of COVID-19 on New York's early childhood workforce

UCHICAGO CONSORTIUM

examines pre-k access and enrollment

ENGLISH LEARNERS

HOUSTON EDUCATION RESEARCH CONSORTIUM examines long-term English Learners in Texas

EQUITY

REL MIDWEST

examines participation in professional development program on culturally responsive practices

RESEARCH ALLIANCE FOR NEW YORK CITY SCHOOLS

examines efforts to disrupt racism in schools

WISCONSIN EDUCATOR EFFECTIVENESS RESEARCH PARTNERSHIP

examines how the strength of school professional culture impacts racial achievement gaps

HIGH SCHOOL

PHILADELPHIA EDUCATION RESEARCH CONSORTIUM

explores credit recovery utilization patterns

POST-SECONDARY

REL SOUTHWEST

examines postsecondary outcomes among high school graduates with disabilities

SCHOOL CHOICE

EDUCATION RESEARCH ALLIANCE FOR NEW ORLEANS

examines how receiving different kinds of information affects families' school choices

SCHOOL CLIMATE

EQUITY IMPLEMENTED PARTNERSHIP

examines student experiences of school climate

Research Headlines From NNERPP Members: Last Quarter, continued

SCHOOL DISCIPLINE

REL NORTHWEST

examines suspension and expulsion

SPECIAL EDUCATION

REL MID-ATLANTIC

examines why school accountability systems disproportionately identify middle schools' SWD subgroups for TSI

STUDENT MOBILITY

BALTIMORE EDUCATION RESEARCH CONSORTIUM

examines student mobility and violent crime exposure

URBAN EDUCATION INSTITUTE

examines the prevalence and effects of school mobility

STUDENTS

EDUCATION RESEARCH ALLIANCE FOR NEW ORLEANS

examines how students' perceptions of their teachers and schools differ when teachers share their demographics

METRO ATLANTA POLICY LAB FOR EDUCATION

examines the impact of free school meals on student health and attendance

OFFICE FOR EDUCATION POLICY examines

- -- Equity in Arkansas' identification process of gifted and talented students
- -- Impacts of school-based health centers on educational outcomes

REL CENTRAL

develops guide to conduct needs assessments for American Indian students

TEACHERS

DIGITAL PROMISE

examines districts' experiences with integrating micro-credentials into teacher professional learning

REL MID-ATLANTIC

examines teacher turnover

REL NORTHEAST & ISLANDS examines

- -- Teacher employment outcomes
- -- Teacher retention

TURNAROUND

EDUCATION POLICY INNOVATION COLLABORATIVE

examines the implementation of Michigan's partnership model of school reform through its second year

End Notes

NNERPP I Extra is a quarterly magazine produced by the National Network of Education Research-Practice Partnerships (NNERPP), a professional learning community for education research-practice partnerships (RPPs) housed at the Kinder Institute for Urban Research at Rice University. NNERPP's mission is to develop, support and connect RPPs in order to improve the relationships between research, policy, and practice.



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