**Title**
Research, Relationships, and Reflection: How Three Research-Practice Partnerships Support Practitioners' Use of Research Evidence

**Section**
Use of Research Evidence Across Settings

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**Panel Justification**
Despite the number of education research-practice partnerships (RPPs) – i.e., long-term, mutually beneficial, formal collaborations between education researchers and practitioners (Coburn, Penuel, and Geil, 2013) – growing in recent years,[1] the field itself is still quite young. In particular, critical bodies of knowledge that will help our understanding of how RPPs work are only now emerging. One example of this phenomena is the limited knowledge we currently have for how and under what conditions RPPs facilitate the use of research, a promise that is often mentioned in conjunction with ways to improve the use of research evidence overall (e.g., DuMont, 2019; Tseng, Easton, and Supplee, 2017). Because RPPs intentionally bring together two communities in education that often find themselves working apart, it has been suggested that RPPs can serve to bridge the longstanding gap between research and practice (e.g., Tseng, 2017; Coburn and Penuel, 2016). In this panel session, we will take up a collaborative exploration of how three current RPPs, representing different cities, topics, levels of intervention, approaches, and stakeholders, are currently working to support the use of research evidence in their partnership. Leveraging the diversity of RPPs represented, we will also test nascent hypotheses on how RPPs actually support the use of research evidence with the panelists.

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[1] For example, the National Network of Education Research-Practice Partnerships (NNERPP) currently lists 40 member RPPs (NNERPP 2019), while the National Science Foundation (NSF) Computer Science for All initiative has led to the creation of over 50 RPPs (NSF 2018; CSforAll 2019).

The moderator will first provide an overview of how RPPs (more broadly) might support research use and connect this to the literature on supporting evidence use (e.g., Nutley, et al., 2007). Next, after having each panelist provide key details describing their partnership's setting, aims, and efforts to support research use, the moderator will facilitate a whole-room discussion anchored to the following questions:

- How does the proximity of the end user (i.e., the "practitioner") to the work mediate the extent to which "research use" needs to be articulated (and actively worked on) as a goal of the partnership? Is it possible for research use to emerge organically when all parties involved in the RPP are simply working towards the same aim, as prior discussions suggest?

- Relatedly, what do RPPs lose when they collapse the aim of supporting research use as a "thing" the *partnership* does? Given the wide variety of stakeholders in an RPP, what adjustments to structures and routines would result if users were actually named, with their needs and preferences defined?

- Finally, while the Henrick, et al. "5 Dimensions of RPP Effectiveness Framework" has advanced our knowledge considerably as it relates to measuring RPP productivity, measuring *research use* within an RPP is still under development. To that end, what indicators (if any) are the panelists currently using to assess instances of research use within their RPP? Is this knowledge being integrated back into the partnership's processes to improve efforts? How?

By learning alongside these three case studies, our goals are twofold: First, develop a greater understanding of how some RPPs are currently supporting research use, and second, learn how we might improve some of the current RPP mechanisms that are hypothesized to lead to research use.

**RESEARCH ALLIANCE FOR NEW YORK CITY SCHOOLS**

**The Maker Partnership Project:**
**A Case Study of a Research-Practice Partnership**

By Cheri Fancsali, Sarah Klevan, Zitsi Mirakhur, and Edgar Rivera-Cash

**Background:** In recent years, there has been a surge of activity aimed at bringing computer science (CS) learning to all students, particularly those who have been historically underrepresented in the field. Our project – a collaboration between researchers, a school support organization, and a curriculum developer – is designing and testing a model of teacher professional development to integrate CS into elementary science instruction.

**Research Design [Setting, Participants, and Data Collection Strategies]:** Designed as a Research-Practice Partnership (RPP), staff from the school support organization and curriculum developer jointly design and deliver teacher professional development. Staff from all three organizations develop research questions, refine measurement strategies and instruments, interpret data, and use the data to inform program improvement.

The RPP began providing professional development to 15 teachers in eight elementary schools across New York City in the fall of 2018. In the first year of the program (2018-2019), teachers implemented the curriculum in an afterschool setting. Currently, in the program's second year (2019-2020), teachers are implementing the model in their classrooms.

This design--moving from an afterschool to in-school setting--has allowed for short-cycle testing, iteration, and improvements to curricular materials and PD, the research design, and data collection. We are using multiple mechanisms for collecting information about the program's effectiveness including teacher and student surveys, assessments of teachers' and students' learning, interviews with administrators and curriculum providers, and case study observations. Over the course of the second year of this study, we will continue to collect and use data to iterate and refine the curriculum, PD, and research instruments.

**Purpose:** The aim of this paper is to use the Maker Partnership Project as a case study of an RPP to highlight effective practices for promoting the use of research evidence by practice-side partners. We discuss the structures and routines of our partnership model that have strengthened our work, thereby facilitating the use of research findings to inform decision-making and program implementation.

**Findings:** We use Henrick, et al.'s (2017) diagnostic rubric for RPPs as an organizing framework to illustrate effective practices in key areas. The rubric is organized into five

dimensions, two of which refer to *process*, the ways in which partners work together, and three of which refer to *impact*, the research and practice results of the team processes in place.

The process oriented dimensions of the Henrick, et al. Framework are focused on relationship building and include: 1) cultivating partnership relationships and 2) developing capacity to engage in partnership work. We have used a range of approaches to build relationships among our organizations and develop our team's capacity to work in partnership. To build relationships, we have set up communication routines and practices that help us align program objectives, research objectives, and instrumentation, and distribute leadership across research and practice-side partners. For example, to ensure all partners have an equal say in our partnership, we jointly set the agenda for our bi-monthly team meetings. Further, to ensure transparency and foster collaboration, we maintain key project files and documentation on a collaborative platform.

To develop the team's capacity to engage in partnership, we have adopted a set of practices that allow us to address big questions raised by our project (i.e., what does computational thinking look like at the elementary level? How will we recognize successful integration of CS and science?) and to reflect on our group process. This includes engaging an advisory board that serves as a 'critical friend' by evaluating our progress towards meeting project objectives, raises questions for our team to think about as we plan for upcoming program and research activities, and provides recommendations. Another way we build partnership capacity is by holding full-team "reflection meetings". These are extended meetings, held over a potluck lunch (which helps build relationships), where we acknowledge our teams' accomplishments, express appreciation for individual accomplishments, and reflect on our partnership using a structured protocol. The protocol includes questions aimed at assessing and improving our group processes such as: Are your organization's needs being met through the partnership? Are we meeting our partnership's needs?

The remaining dimensions of the Framework are impact-oriented and include 1) impacting local improvement efforts 2) conducting and using rigorous and relevant research and 3) informing the work of others (Henrick, et al., 2017). While the Maker Partnership Project is young, we are beginning to see the ways in which our intentional team practices have advanced our goals of using research to inform decision-making and program implementation. One way we have accomplished this is by prioritizing quick feedback for our partners. This includes fast turn-around of post-professional development teacher survey results and presenting formative findings from case study research.

In our reflection meetings, we have learned from our partners that these practices have led to important program changes. For example, when our post-PD surveys suggested that teachers had not fully grasped the concept of computational thinking, our program partners revised their planning for the following teacher training so that they could revisit and reinforce teacher

understanding of the concept. Similarly, when our survey suggested that one barrier to implementation for teachers was low levels of administrator support, our program partners shifted their efforts so that they could meet individually with school administrators to clarify program goals and administrator roles. Our quick analysis and presentation of teacher survey results allowed our practice-side partners to use the findings to quickly address programming obstacles.

**Conclusion:** This work points to the value of researchers and practice-side partners investing effort early in a project's life cycle to develop practices that promote relationship building and team capacity. Doing so supports continuous reflection and allows for evidence-based adaptations to the intervention. Further, it allows the research partner to optimize the relevancy of their research activities. Though this partnership is young, we suspect that these practices will continue to improve the work of our practice-side partners, support future replication and scale-up of the model, and inform the work of other local improvement efforts.

# CHICAGO ALLIANCE FOR EQUITY IN COMPUTER SCIENCE (CAFÉCS)

## How a Research-Practice Partnership supports evidence use and informs decision-making for equitable access to computer science in a large urban school district

Erin Henrick, Partner to Improve
Steven McGee, The Learning Partnership
Andrew M. Rasmussen and Don Yanek, Chicago Public Schools
Lucia Dettori, DePaul University
Ronald I. Greenberg, Loyola University
Dale F. Reed, The University of Illinois at Chicago

**Purpose:** A primary goal of RPPs is to impact decision making in education through the use of research evidence (NNERPP, 2019). However, at present, few studies point to what effective research use looks like and what conditions need to be in place in order to maximize the potential of effective research use (Gitomer and Crouse, 2019). Empirical evidence is needed to further understand how and in what ways using research evidence in RPPs is indeed impacting decision making in education and ultimately, improving outcomes for children. One way to do this is for RPPs to "articulate theories of action for research use, empirically test them, and then iteratively improve their work and refine their theories" (Tseng, 2017, pg. 10).

This study seeks to describe the practice of research use in a research practice partnership aiming to support Chicago Public Schools' initiative to provide every student in the district with a high quality computer science experience.

**Background:** The Chicago Alliance for Equity in Computer Science (CAFÉCS) RPP seeks to address the challenges associated with providing every high school student in Chicago Public Schools (CPS) with a high-quality, introductory computer science (CS) education course (Dettori et al. 2018). In 2016, CPS enacted CS as a high school graduation requirement. The team has been collaborating for almost a decade and established CAFÉCS in 2017 as an RPP to support CPS in the implementation of the graduation policy by providing CPS schools with the necessary supports to deliver equitable access to CS and hold them accountable for the quality of the program.

**Research Design, Data Collection, and Analyses:** This analysis uses a case study design, with the goal to provide rich, descriptive claims about how research is being used within the CAFÉCS partnership, along with descriptions about the mechanisms that have led to research use within the partnership. The study design employs program based evaluation design (Weiss, 1997) and uses qualitative methods to synthesize information across multiple information sources in order

to document progress along each dimension of the RPP effectiveness framework (Henrick, Cobb, Penuel, Jackson and Clark, 2017).

Briefly, the RPP effectiveness framework includes five dimensions and related indicators of progress for each dimension. Although each of the five dimensions relates to a specific objective of RPPs, the key objective of improving the use of research in practice spans the second, third, and fifth dimensions. The second dimension describes conducting research that is both rigorous and relevant to practitioners, and thus has greater potential to be used; the third dimension concerns the extent to which the research is actually used to address specific problems of practice; and the fifth dimension focuses on building the capacity to use research to address problems of practice more generally.

In order to understand research use in CAFÉCS, it is first critical to understand the goals of the RPP and the hypothesized mechanisms or processes by which the intended improvements will be produced (Henrick et al., 2017). Data from this study comes from data collected through the external evaluation research of CAFÉCS and includes audio-recorded interviews and focus group meetings with leadership team members (which includes practitioners, university CS faculty, and education researchers); monthly meetings with the CAFÉCS PI, individual and group interviews with members of the CPS Office of Computer Science and The Learning Partnership, and observational notes from weekly CAFÉCS leadership team meetings, monthly whole team CAFÉCS meetings and quarterly leadership retreats.

**Findings**: Findings indicate that the theory of action for research use in CAFÉCS is 1) identify a problem, 2) better understand the problem, and 3) determine what steps to take next, typically including collaborative grant development to pilot test solutions and gather evidence on which solutions to scale to address the problem.

> *Lack of access to CS*: The problem of practice that brought the team together a decade ago was a lack of access to computer science classes for students in CPS. The team collaboratively researched curricula aligned with the goals of the CS department, resulting in the adoption of the Exploring Computer Science (ECS) curricula. The CAFÉCS team then collaboratively wrote grants to secure funding to support training and professional development for teachers to the ECS curricula. In this example, lack of access led to selection of a curriculum and securing funding to support implementation. The program was successful in supporting the expansion of CS within the district.

> *Insufficient teacher support*: CAFÉCS collected data to understand more about the teachers' backgrounds and their experiences in ECS PD as well as observational data to understand more about their instructional practices. The data showed that roughly half of

the teachers were from disciplines other than CS (Dettori, Greenberg, Reed, McGee 2016). In addition, the teachers certified in CS needed to make a transition to teaching in inquiry-based mode.  The findings indicated that teachers needed further support to customize ECS activities to make them relevant and engaging and connect meaningful activities to the underlying CS concepts. These findings led to collaborative grant writing that resulted in additional funding to pursue instructional coaching in CS.

*Inequitable opportunities for students after introductory CS course:* Data collected by CAFÉCS indicated that although the ECS course was inspiring students to pursue computer science beyond an introductory course in high school (McGee et. al., 2018), there was inequitable access to and success in advanced coursework (McGee et. al., 2019). A current strand of CAFÉCS work is to collaboratively seek additional funding to support equitable access and success in AP CSP.

**Mechanisms that have supported this work**: Sharing initial findings regularly to inform discussions in weekly meetings, a process for prioritizing and collaborative decision-making, and flexibility for adjusting priorities to align with the strategic plan of the district.

**LOS ANGELES EDUCATION RESEARCH INSTITUTE**

**A Research-Practice Partnership Project to Understand How Some District Schools Improve Students' Academic Skills**

By Carrie Miller (presenting), UCLA; Meredith Phillips, UCLA; and Kyo Yamashiro (Loyola Marymount University)

**Partnership Background:** In 2012, The Los Angeles Education Research Institute (LAERI) established a research-practice partnership with the Los Angeles Unified School District (L.A. Unified), through a long-term memorandum of understanding and data-sharing agreement. L.A. Unified is the second-largest school district in the country, serves close to 600,000 students, and represents about ten percent of the state's K-12 population. More than four out of five L.A. Unified students are eligible for subsidized meals and roughly one in five are classified as English Language Learners.

LAERI aims to connect research to education policy and practice in ways that lead to improvements in the equity and quality of Los Angeles students' educational experiences and outcomes. LAERI-affiliated research projects seek to develop cumulative and useful knowledge about pressing challenges in the district and their potential solutions. Over the years, our research has supported the district's focus on improving students' college readiness and educational attainment by describing students' college enrollment and completion patterns, the availability of college access supports, and longitudinal predictors of students' college readiness. For this panel, LAERI-affiliated scholars will discuss a multi-phase, mixed-methods project that aims, ultimately, to support the adoption of practices by school staff that contribute to important improvements in elementary and middle school students' math and English language arts (ELA) skills.

**Partnership Processes:** To support the development of timely, actionable research and the use of research evidence, LAERI-affiliated researchers and district staff meet in regularly scheduled research-practice partnership meetings, as well as in smaller research-project-specific groups. Researchers and our district partners review and provide feedback on intermediate results and discuss next steps given what has been learned from the research. These groups also work collaboratively to develop new projects that address district needs. To build trust and facilitate open communication between researchers and practice-side partners, LAERI adheres to a "no surprises" policy so that district staff have the opportunity to review findings and develop a communication strategy before results become public.

**Developing Knowledge about the Mechanisms Contributing to School Effectiveness:** The mixed-methods project we will discuss on this panel focuses on understanding the mechanisms underlying school effectiveness in L.A. elementary and middle schools, with the ultimate goal of supporting our district partners in implementing successful practices more widely throughout the district. This project builds on several research traditions in education, including the literature on the characteristics of schools, particularly their organization and climate, that contribute to student learning; aspects of classroom practices and teaching quality that facilitate student learning; and the literature that evaluates school interventions designed to improve the achievement of low-income or initially lower-achieving students.

For this project, we analyzed district administrative data for four consecutive longitudinal cohorts to identify elementary and middle schools in which low-income students consistently gained more in math and/or ELA between kindergarten and fifth grade or sixth and eighth grade relative to initially similar peers at other district schools. Simultaneously, we worked with our district partners to add survey questions about school practices to the district's existing annual districtwide principal and teacher surveys. We co-developed the initial survey questions based on existing literature and interviews with school district leaders. We also asked some open-ended survey questions to help us develop a list of closed-ended response options for subsequent survey waves. Over the last few years, we have worked with our district partners to revise and expand on these questions to capture a broader set of practices. Through these survey data, we have begun to understand the extent of variation in practices across schools, whether that variation is associated with students' math and/or ELA gains, and the limitations of trying to understand school processes through staff survey data.

For the second stage of the project, we used district administrative data to select a few "matched pair" schools that served initially-similar students, but differed considerably in their students' gains. We conducted group interviews with teachers and instructional support staff (e.g., instructional coaches) at those schools, to try to understand what programs, strategies, and practices might help differentiate among the schools with larger and smaller achievement gains.

The third stage of the project, which we are engaged in now, involves convening a "design working group" composed of interested district staff and school staff who participated in the interviews. During the design working group meetings, we will share what we have learned, discuss next steps for this research, and brainstorm ways to share practices across schools.

We anticipate that this design working group may lead to subsequent stages of the project during which some schools may try to adopt potentially effective strategies and practices. We will study that process, perhaps ultimately codifying some strategies/practices that could be implemented in the context of a causally-persuasive design, so that we can evaluate their effectiveness.

**Findings:** During this panel discussion, we will share lessons learned about how to support practitioner partners in using research evidence. We will illustrate how we have communicated the results from complex statistical models to district leaders. We will also describe the challenges of trying to measure school or classroom practices through school surveys, and how initial survey results stimulated practitioners' interest in collecting additional data to better understand the "black box" of school effectiveness. We will also discuss how we have distilled and shared lessons learned from the research literature about causal evidence of effective practices with district and school staff. We anticipate that our work over the course of this school year with the design working group will yield additional insights about how to support practice-side partners in using evidence to inform decision-making.

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