Building Capacity for Research and Practice: A Partnership Approach

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Summary

Building a research-practice partnership that spans two or more organizations can be challenging. University researchers, for instance, may find themselves in schools or departments where the incentives and culture favor more individualistic, single-discipline research projects. Practitioners and policy makers may not see the value of investing in research and evaluation, or they may hesitate to prioritize this work above more pressing operational and strategic aims.

In this article, Maia Connors, Debra M. Pacchiano, Amanda G. Stein, and Mallary I. Swartz show how an "embedded partnership" between the program implementation and research teams within a single nonprofit organization (Start Early, formerly the Ounce of Prevention Fund) can help overcome such challenges and build important capacities that research-practice partnerships need in order to be effective: an organizational culture that values research evidence, sound measurement, and continuous learning; interdisciplinary expertise; and sustainable infrastructure, including administrative support, technology, and financial resources.

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Increasingly, people who work in early childhood care and education (ECCE) are emphasizing that research evidence and data should guide the development, implementation, and improvement of programs, as well as decision-making at multiple levels. Yet the capacities needed to effectively achieve this ideal are substantial, and they're rarely achieved by researchers or practitioners alone.[1] In recent years, research-practice partnerships (RPPs) have garnered support as a promising solution to improving ECCE programs, outcomes, services, policies, and systems.[2] In a seminal report, Cynthia Coburn, William Penuel, and Kimberly Geil define five key aspects of successful RPPs: mutualism, commitment to long-term collaboration, a focus on problems of practice, the use of intentional partnership strategies, and trusting relationships.[3] In this article, we argue that RPPs can't reliably develop these qualities without intentionally building and fully integrating partnership capacities—including organizational structure and culture, interdisciplinary expertise, and sustainable infrastructure—among both researchers and practitioners.

Yet it's a substantial challenge to build and integrate these capacities for both partners following a traditional RPP model, in which researchers and practitioners are in separate organizations, each with its own discipline-specific capacities and focus. An alternative approach is to embed researchers and practitioners in a single organization. Such an embedded RPP may help partners more successfully develop organizational capacities that support strong partnerships and make use of them in sustainable ways. Here we discuss the unique advantages that embedded RPPs confer as well as the challenges they pose. We also offer recommendations for how to build capacity to support any successful RPP, including how to establish and foster research capacity in practice organizations to create embedded RPPs, as well as how nonembedded, cross-organizational RPPs can cultivate similar capacities when an embedded structure isn't desirable or feasible.

The lessons we share here derive from our experience conducting research and evaluation as part of embedded RPPs at Start Early (formerly the Ounce of Prevention Fund), a large early childhood nonprofit organization. Throughout the article, we draw examples from two RPPs: one focused on improving and scaling the Essential Fellowship (formerly Lead Learn Excel), a professional development program for ECCE leaders, and a second focused on implementing and improving outcomes of Educare Chicago, Start Early's local Early Head Start/Head Start school for children from birth through age five and their families.

Moving toward an Embedded RPP

Recently, practitioners, policy makers, and researchers have been calling for changes in the way intervention research is conducted. RPPs may be, in part, an answer to this call. Conducting research as part of an RPP is fundamentally different from conducting research with practitioners. In an RPP, instead of first defining a research question and then recruiting practitioners who are willing to participate in that research, researchers enter a partnership with practitioners to define the research questions that they'll pursue together.[4] This approach requires researchers and practitioners to seek a balance among their different needs and perspectives. For example, the need for causal evidence at key

points must be balanced against the need for a wealth of descriptive information about implementation to guide development and improvement of the program or practice (see the article in in this issue by Rachel Abenavoli and colleagues). Yet many research and practice organizations lack the capacity to effectively engage in this kind of partnership. For RPPs to succeed as a new way to conduct intervention research, both research and practice organizations must strengthen their capacity to do this work. In our experience, an embedded RPP structure that fully integrates research within practice and practice within research, so that the capacities of the partners are inextricably entwined, shows great promise as a sustainable and effective approach.

Embedding Researchers in Practice Organizations

The very existence of our roles as researchers in a practice-oriented nonprofit organization is a testament to the capacity our organization has built to support the work of RPPs. As an interdisciplinary organization, Start Early has always valued research and inquiry, but it has taken many years to realize the structures and capability needed to support these values internally. Our embedded RPP approach first took shape decades ago when the organization needed to report to various public and private funders on the implementation of our ECCE programs and grant activities. As funder groups began asking for more rigorous evidence of outcomes and quality, our role as Start Early researchers expanded to include selecting assessments, advising on measurement concepts (for example, reliability, validity, and standard scores), synthesizing program data, translating research findings, and generating questions of interest for grant applications. As a result, practitioners now had more information about their programs, and they started seeking assistance not only with collecting data but also with interpreting and using it to understand how to improve practice and outcomes and to translate those discoveries into policy. In response, Start Early researchers and program staff instituted new RPP routines (such as monthly meetings) to advance these shared aims.

Working within embedded RPPs in this way has helped us integrate rigorous research and evaluation studies into continuous quality improvement processes. As a result, practice as usual can support our research activities, and our ongoing research activities in turn bolster implementation, improvement, and decision-making among practitioners. This means, for example, that building sustainable data collection capacity and developing data use routines have become integral parts of both the RPP and the program model, rather than add-ons or tasks that take away from the "real" work of implementing the program or conducting research studies. This structure also helps us build long-term, trusting relationships that allow us, as research partners, to stick with our practice partners throughout the life of the program, reminding them of important data sources or relevant research findings as the program evolves, translating and reinterpreting findings as practitioners continue to draw from them in new ways, and tailoring future research to questions that arise when implementation challenges come up. We believe that as embedded researchers who don't work, for example, as tenure-track faculty in a university and thus aren't subject to the pressure to produce peer-reviewed publications, or at a research firm in which we'd be required to bill our time to contracted projects, we're particularly

well positioned to invest time and effort in this work.

Roles in an Embedded RPP

The hallmark of any RPP, and of our embedded RPPs in particular, is the joint management of the partnership by the research and practice partners, who make equal yet role-specific contributions to the work. In the sections that follow, we describe how partner roles are defined and differentiated in our embedded RPPs and also consider the important contributions that external researchers can make when added to embedded partnerships—an approach we have frequently taken.

The Research Partner

In our RPPs, the research partner has four functions:

- to design and build the infrastructure to support regular collection of reliable data on implementation and outcomes as an integral part of program implementation;
- to conduct evaluations to guide program implementation, improvements, and expansion;
- to conduct applied research to generate novel and generalizable findings; and
- to help program implementers interpret findings to guide their decisions.

Traditional RPPs primarily fill the second and third functions. But it's the first and fourth functions that create opportunities for research to be most useful to practitioners. For example, researchers can support strong and sustainable data collection infrastructure by leading survey development, helping to integrate survey data into existing program databases and reporting, and creating tools for program staff that remind them of the data collection timeline, measures, and purpose. Similarly, researchers can develop protocols to support practice partners' interpretation and use of the data. These functions require that research partners work closely with practice partners from the very beginning of a new program and continue doing so beyond the conclusion of any one study. To a degree that is relatively unusual in our field, this approach to sharing the journey from the start makes it easier to collect data, use that data to improve programs, and produce novel, actionable evidence.

The Practice Partner

In addition to developing and implementing an intervention or program, practice partners focus on identifying goals for data collection and research and on using findings to improve their practice. Specifically, practice partners

- specify key inputs, activities, and expected short- and long-term program outcomes and help determine what information needs to be collected about each;
- independently monitor data regarding basic program implementation (for example, number of participants or attendance);
- collaborate with research partners frequently to review, interpret, and reflect on data and use that information to identify small changes that can be made to increase fidelity

of implementation and effectiveness of model core components; and

- collaborate with research partners to use research findings to determine and design content additions or refinements to the program model itself.

For example, our practice partners often take the lead on documenting the supports they provide to families or ECCE professionals. Insights from their qualitative data are often especially useful in providing context for interpreting program evaluation findings in ways that can help programs improve.

External Research Partners in Embedded RPPs

Even when embedded research and practice partners both successfully fill their roles, expanding an embedded RPP to include external research partners can help overcome some key obstacles. For example, although embedded researchers may be best positioned to foresee and plan for the key points at which conducting a summative impact study is necessary and appropriate to assess the program's effectiveness in achieving its intended outcomes, they may lack the expertise or capacity to conduct a rigorous evaluation alone. In these cases, partnerships with external evaluators can be invaluable.

Specifically, because practice organizations typically have small research teams, embedded researchers can't possibly have expertise in all the topics and methods of inquiry that a long-term RPP may eventually require. Partnering with other researchers can bring distinct perspectives and specialized, complementary expertise to an embedded RPP just when it's needed most. External research partners are also valuable simply for what they represent or have access to. Researchers working in practice-oriented organizations may, for example, face challenges in meeting research funding requirements, building institutional review boards, developing information technology infrastructure, gaining academic library access, and obtaining staffing support from student research assistants or data analysts. Typically, these critical research supports are most well developed in universities and large research firms. Partnering with researchers who work in more traditional research institutions can help embedded RPPs access such resources. And embedded RPPs would also benefit from future work focused on understanding how to better provide these resources to researchers operating outside of traditional research institutions.

Working with outside researchers has one more advantage. Because embedded researchers are so deeply integrated with the practice partners who develop and implement the program they're studying, funders, for example, may express concerns about real or perceived biases. Outside researcher partners may alleviate these concerns by serving as neutral third-party evaluators. Indeed, each of the embedded RPPs we discuss in this article either grew out of or was supported by external evaluators who were instrumental in helping to build their initial capacity.

Our Embedded RPPs

Two of our embedded RPPs illustrate the capacities and partnership processes that help researchers work side by side with practitioners at Start Early. The primary

aim of both RPPs is to undertake formative evaluation of program implementation and short-term outcomes to guide improvement as the program develops and evolves. Through this work, we hope not only to provide our current partners with information they need to improve their practice in the short term but also to generate research findings in the longer term that are both relevant and generalizable to practitioners elsewhere.

The Essential Fellowship RPP

The Essential Fellowship is a professional development program designed to help ECCE leaders improve the quality of classroom instruction through instructional leadership and job-embedded professional learning routines for teachers in both schools and community-based ECCE programs. The program offers training, coaching, and peer learning, as well as practical tools and resources for local professional development providers and site-level ECCE leaders. The Essential Fellowship RPP has been at the core of this initiative since its inception: our research and evaluation team codesigned and co-constructed a robust data collection and research infrastructure that is embedded in the program model and that enables implementation, improvements, sustainability, and expansion.

In phase 1 of the project (2011–14), a team of researchers and practitioners at Start Early, supported by a federal Investing in Innovation development grant, developed and implemented the model, which was piloted with 15 administrators and 60 teachers serving a diverse group of approximately 600 infants, toddlers, and preschoolers in four community-based ECCE programs in Chicago serving low-income families. It also funded external researchers from the University of Illinois at Chicago (UIC) to study the program's effects. In phase 2 (2014–17), with Race to the Top-Early Learning Challenge funds from the state of Illinois, Start Early implementation and research teams refined key professional learning supports, tools, and strategies and implemented the Essential Fellowship statewide to help schools and community-based centers improve preschool instruction; UIC researchers also conducted external evaluations of the refined model. In this phase, the evaluators focused on implementation and outcomes (for example, changes in participants' mindset, knowledge, and practices over the course of the Essential Fellowship) rather than impact (causal estimates of differences in practice change between Essential Fellowship participants and a control group who didn't participate in the program).

The UIC partners were initially brought in because of funder-defined evaluation requirements. But as the first two phases of the work progressed, the long-term, cross-institution RPP that emerged among the Essential Fellowship program implementation and research and evaluation teams at Start Early and UIC became invaluable. In this partnership, Start Early researchers at the master's and doctoral level functioned as liaisons between the program implementers and UIC evaluators by promoting mutual understanding and improvement. The processes, methods, and measures used by UIC served as an important model for the Start Early research team because once the formal relationship with the external evaluation partners ended, we continued to formatively evaluate the program internally via our embedded RPP. Currently, the Essential Fellowship RPP

is working to answer program evaluation questions such as "How frequently do ECCE leaders participating in the Essential Fellowship use data when coaching their teachers?" as well as broader research questions such as "How do community-based versus school-based ECCE leaders use data in ways that are similar or different?"

The Educare Chicago RPP

Educare Chicago, directly operated by Start Early, is a high-quality ECCE center on the South Side of Chicago serving over 140 low-income or otherwise disadvantaged children from six weeks to five years old, as well as their families. Educare Chicago is the flagship school in a network of over 20 similar schools across the nation. Each full-day, full-year Educare school is a public-private partnership between a Head Start or Early Head Start provider, a local school district, and one or more philanthropic organizations. The schools subscribe to the Educare model, which includes four core practice domains: data use, embedded professional development, high-quality teaching practices, and intensive family engagement. To guide continuous practice improvement, Educare school leaders form RPPs with local evaluation partners (LEPs).

Start Early's research and evaluation division serves as an embedded LEP for Educare Chicago to support the school's staff and leaders. The division gathers direct assessment, survey, and observational data each year, providing considerably more information than Head Start centers typically collect. These data are then integrated with data gathered by program staff and used as part of existing, embedded routines (for example, management and grade-level meetings, lesson planning, and coaching) that focus on setting goals, planning for implementation, evaluating progress, and improving practice, staff professional development, and student and family outcomes. Together, Educare Chicago leaders and the LEP team identify priority areas of inquiry and generate questions that can be studied to help improve program quality.

The Educare Chicago RPP dates back to 2005, when there were only three Educare schools. Together, the schools developed a research design and approach to gathering common data that would help them better understand children's and families' progress in the program and illuminate the links between child and family outcomes and implementation of the Educare model. Since then, though both the design and implementation of the Educare Chicago RPP have evolved, the group has held steadfast in its commitment to using priority problems of practice identified by program leaders and staff to drive data analysis and to focus on the multilayered routines of continuous quality improvement.

Within the network, Educare Chicago has always been unique in that the school staff and LEPs are employed by the same organization; at most Educare schools, LEPs are university based. We believe that researchers who are embedded rather than based in a university have greater flexibility to spend time and effort building a sustainable infrastructure for research. For example, because the Educare Chicago LEPs and school staff work for the same organization, we don't have to negotiate a contract (and be limited to its terms) in order to work together. LEPs access the school's data directly by logging in to their various

data systems (such as ChildPlus or Teaching Strategies GOLD), and are acutely aware of practice requirements and constraints because we can see the terms of the school's funding agreements and contracts.

Building Capacity to Support the Work of RPPs

We've found that three types of capacity are essential to organizing and operating our embedded RPPs effectively and sustainably:

- an organizational structure and culture that values research evidence and sound measurement and that encourages professionals to engage in interdisciplinary collaboration and continuous learning;
- an adequate number of interdisciplinary staff who possess key knowledge, skills, and dispositions, and sufficient time to engage in these partnerships; and
- an infrastructure that enables this work to be done successfully and sustainably.

These three capacities may have made possible the lasting, dynamic relationship between our research and practice partners.[5] Cultivating these capacities to support both research and practice partners is necessary for any RPP to become the standard "way of working," whether the RPP is embedded or not. But we've found that building these capacities to support both partners in a single organization has made traditional boundaries between research and practice professionals and activities more permeable than they are in RPPs that are organized across two or more organizations.[6]

Organizational Structure and Culture

RPPs may thrive most readily in organizations that cultivate shared values and commitments and that facilitate processes and methods conducive to translating new knowledge into new practices and behaviors.[7] In particular, we expect that RPPs are likely to be most successful when partners work in one or more organizations that embody certain *learning-oriented* characteristics.

For example, strong organizational leadership that is committed to teamwork and continuous learning has been essential to our RPPs. Such leadership crafts the organizational structure and allocates staff time in ways that prioritize collaboration among diverse professionals. Specifically, we believe research and practice partners work together most efficiently when leaders structure their organizations to be inherently interdisciplinary by making it easier to work across teams and with external partners. At Start Early, teams of professionals with different kinds of expertise—including in policy, research, and practice related to both home visiting and center-based ECCE and in the development of professionals and systems—routinely work together on projects that cut across these categories. Executive leaders at Start Early have supported this way of working by making investments in strengthening both research and practice teams' ability to collaborate with one another. For example, the research team has grown to include more doctoral- and master's-level researchers whose jobs focus on working directly with Start Early program teams, and program teams now include staff who concentrate on strengthening program implementation

and operations through collecting, managing, using, and reporting data with support from their research partners.

We also expect that RPPs will be more successful when the organizations that employ both practice and research partners strongly value answering critical research questions or solving problems of practice or policy and are intentionally structured to do so. This focus is more likely to yield novel findings that are relevant to a broader audience and to help partners work together to translate and apply this new knowledge to ECCE policy and practice. Although a focus on inquiry is likely common in the organizations where research partners work, it may not be as common in practice partner organizations, and it takes time to develop.

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Finally, both research and practice partners need to work in organizations that value their shared pragmatic goals: to support effective design and implementation of high-quality programming, practices, and policies; continuous quality improvement; and strong child and family outcomes. These organizational characteristics are likely to be central to the organizations in which practice partners work, but the same may not be true of most research organizations. In fact, one of the primary advantages of embedding research partners in the same organization as the practice partners is that it allows researchers to center so much of their attention on these pragmatic goals. For example, Start Early's research and evaluation division is explicitly charged with partnering with practice and policy colleagues to identify and study critical unanswered questions and problems of practice and then to translate findings about those questions into actionable interventions, policies, or improvements. In contrast, most research organizations tend to have narrower objectives—concentrating primarily on original research, program evaluation, and testing interventions, and focusing less on dissemination to broad audiences, translation of evidence, and program improvement.

Interdisciplinary Human Capital

Whether researchers and practitioners are embedded in a single organization or work across multiple organizations, a successful RPP functions as an interdisciplinary group that makes better decisions together because of the members' diverse knowledge, expertise, and perspectives. At Start Early, staff members are hired both for their discipline-specific competencies and their interdisciplinary experience. This approach has helped not only to build the organization's human capital in multiple disciplines (including child development, social work, public policy, psychology, ECCE, K–12 education, knowledge sharing and technology, program evaluation, and applied research) but also to support collaborative work across these areas of expertise.

RPPs must also cultivate social capital; that is, they must establish trusting relationships among partners, engage in active listening, and demonstrate respect for others' discipline-specific standards and priorities. Partners' different priorities (for example, the research partner's need for high response rates to implementation surveys versus the practitioners' concerns about burdening their staff with documentation requests) inevitably lead to tensions. Placing both partners in a single organization doesn't eliminate this problem. But when researchers and practitioners are equally committed to the organizational mission and to each other as colleagues, the resulting climate can help bolster motivation, flexibility, and even creativity in navigating these inevitable tensions.

Finally, organizations must also think about human capital in terms of the composition, depth, and breadth of capabilities across their entire workforce. At a basic level, having adequate staff with dedicated time is critical to RPPs' success.

Sustainable Infrastructure

A fully integrated RPP requires solid infrastructure that bridges disciplinary gaps, thereby encouraging sustainable researcher-practitioner collaboration, program implementation and improvement, and research activity.[8] Four primary components of our RPPs' infrastructure have been key to accomplishing these goals.

First, our embedded RPPs rely on systems for planning, scheduling, and agenda setting that help coordinate and advance the work across the entire cycle of program development, piloting, refinement, and evaluation. With these systems in place, researchers and practitioners come together routinely to collaborate on activities such as determining research questions; developing or selecting appropriate measures; collecting, managing, and analyzing data, and preparing data for interpretation; and using data for reporting, knowledge building, and program improvement. Without this kind of infrastructure, these activities either don't happen or aren't accomplished collaboratively in ways that support relationship building, reflection, and planning. A typical RPP at Start Early meets formally once a month, but informal discussions and quick check-ins occur weekly or even daily.

Tools that structure the work of the RPP and supply a scaffold for members as they collaboratively plan, reflect, and decide together are also critical. These include protocols, learning agendas, and logic models. For example, collaboration protocols, or step-by-step instructions that often include guiding questions, are used to structure RPP activities such as generating research questions, reviewing and interpreting data, determining the implications of findings, and prioritizing among options.

A third component of our RPP infrastructure is technology. Effective RPPs need specialized platforms and software for developing measures, collecting data, and managing, analyzing, and visualizing. Such specialized platforms are generally available to researchers (at least those in traditional research organizations), but they're not commonly used by practitioners or by most organizations that employ them. Thus, these platforms often need to be integrated with other systems being used to manage and implement the ECCE program itself, such as a management information system for programs directly serving children and families (such as ChildPlus, for example) or a

learning management system for professional development programs (such as CornerStone on Demand). Integrating these technologies so that they can be used by staff to support the work of an RPP typically requires a skilled information technology team.

Finally, funding has also been critical to building capacity for our RPPs. Without sufficient funding for the required infrastructure, the time needed to carry out the work, and an interdisciplinary work force, fully integrated RPPs wouldn't be possible. Unfortunately, grant requirements and funding structures don't always make it easy to use funds for this sort of capacity building and partnership. At Start Early, we're still working to determine the best approach to fundraising and fiscal management for conducting research and evaluation through embedded RPPs. But an advantage of having research and practice partners embedded in a single organization is that we can create efficiencies across our multiple RPPs. For example, research and evaluation functions and team members can be positioned as a shared service, akin to information technology or communications in some organizations. In our RPPs, this structure helps us access funding, such as philanthropic and private donations, to support our RPPs' general operating costs. These types of funds may be harder to get in an RPP made up of partners working across two or more organizations.

Overall, these four infrastructure components—and the ways they're integrated with one another—give RPPs the flexibility to use the data they generate for multiple purposes and to answer a variety of questions, many of which have not been defined in advance. At the same time, the infrastructure should also be durable enough to sustain the partnership and RPP activities over time and across individual projects. Start Early aims to achieve this goal by building every component of our RPP infrastructure in such a way that they first and foremost support the design, implementation, and improvement of programs and interventions; the fact that doing so ensures robust data collection that meets research standards is a bonus of program implementation as usual.

Challenges and Successes of Our Embedded Partnerships

Our embedded RPPs have benefited greatly from these three capacities; they have allowed both practice and research partners in our RPPs to achieve meaningful successes. Yet building these capacities in a practice-oriented organization has also involved several challenges along the way. Next, we discuss some of the capacity-building challenges and successes that we've encountered in our Essential Fellowship and Educare Chicago RPPs.

Demand and Efficiencies

Overall, our embedded RPPs have inspired positive attitudes (and less fear) about evaluation, data, and translating research evidence among our practice partners, as well as new mindsets of continuous learning and improvement that guide their day-to-day work. As a result, we are seeing more demand among Start Early program implementers for evaluation evidence and robust data and a stronger appetite for participating in RPPs. This is a success, but it has also presented a significant capacity challenge for our research and evaluation team, which is now engaged in multiple embedded RPPs simultaneously with programs in different phases of development, implementation, or scaling. To address this

challenge, we're working to standardize our approach to research and evaluation across RPPs by systematizing core evaluation procedures, methods, definitions, data use processes, and even some metrics and measures. In this way, embedded researchers may be in some ways better positioned to learn across programs than they would be in a more traditional structure that involves only one program.

It isn't always obvious who should take the lead.

Roles and Responsibilities

In our embedded RPPs, we can work in an integrated, interdisciplinary way. However, this means we need to be especially intentional and transparent about the division of labor and ensure a balance in assigning partners to lead various phases and functions of the work. It isn't always obvious who should take the lead on tasks such as setting the research or learning agenda, developing data collection tools, monitoring data collection and response rates, establishing and implementing data use routines, and writing reports to oversight agencies and funders. For example, Educare Chicago leaders and staff wanted to explore the relationships between students' attendance and daily arrival pickup times with learning and development outcomes. To answer these questions, their LEPs conducted analyses, found positive associations of attendance and student outcomes, and presented those findings to the school leadership team, who helped them to contextualize and interpret the findings. From that point, the research partners took the lead on integrating these findings into annual program reflection and goal-setting routines and developing graphics and brief data-based messages for families. Program partners took on the responsibility to communicate this information to staff and families as part of their larger efforts to improve attendance rates.

These roles are further complicated by the fact that Start Early's organizational structure includes multiple shared services, including marketing, information technology and knowledge sharing, instructional design, project management, and development. Because we're all employed by the same organization, all members of our embedded RPPs frequently interact closely with colleagues in these other disciplines. Although our ability to engage these various colleagues has undoubtedly improved the quality of our work, it can be challenging to assign roles, make decisions, and come to consensus on goals, priorities, and approach.

Communications and Dissemination

Effectively summarizing, communicating, and disseminating research findings to diverse audiences is a longtime challenge for our embedded RPPs. Many groups are invested in understanding and using information generated from direct assessments of Educare Chicago children, including program leaders, teachers and staff who work with families, parents and family members, our governing board and policy council, and program funders. Each group has distinct requirements for using the same data and findings as well as different interests and capacities. In response, LEPs have generated reports and routines that present and explore child assessment data separately for each group. Although this approach has been largely successful, it is also extremely

time consuming and has often tested the limits of our communication capacities.

Other RPPs likely face similar challenges: Successfully communicating research and evaluation findings requires skills such as writing for different audiences, data visualization, graphic design, and marketing. Yet researchers' academic training often prepares them mostly for communicating research results to other researchers. And practitioners may not have the skills, interest, or time to take on this role. The embedded nature of our RPPs has let us address this challenge head on: our organization has worked to build communications capacity—including both human capital and funding—to better support RPPs in dissemination activities.

Data Systems

Many RPPs face challenges in establishing an infrastructure—which includes selecting and implementing technology platforms—that will enable them to collect, analyze, and report data. This is particularly hard when the RPP intends to use data for more than one purpose. In the Essential Fellowship, for example, we've struggled to link individual participant records from their initial registration to their responses to surveys that generate data for evaluation and continuous improvement—a data infrastructure capacity that we need to support both program implementation and research.

Despite these challenges, we've partnered with our information technology team to create sustainable, integrated systems of data collection and sharing that our practice partners now rely on for robust information about their programs. For example, our Essential Fellowship practice partners can now access real-time online data dashboards, automated emails that send completed online surveys back to participants immediately, and job aids for coaches that support in-the-moment reflection and data-informed practice in a way that also captures reliable progress and interim outcomes. As a result, they can now use these data independently, as well as in monthly "research-to-practice" meetings with their research partners.

These data systems have also given research partners access to large, often longitudinal administrative data sets with relevant and rigorous implementation and outcome data. Importantly, because research partners in our embedded RPPs are so deeply integrated with the program teams and collaborate on designing the infrastructure for administrative data, they are able to contribute to decisions about that data, including what is measured and when and how it is collected. For example, Educare Chicago participated in an initiative that addressed alignment between early childhood and K–12 schools. From this initiative, it concluded that a common data source about students' learning and outcomes could be an important alignment support. To help create this support, LEPs trained preschool teachers to administer, score, and use data from a formative assessment of early literacy knowledge and skill that was also being used in K–5 schools; as a result, we were then able to confidently use that data as an indicator of children's learning.

Recommendations for Researchers and Practitioners

Embedded RPPs aren't typical in the early childhood field. Most often, researchers and practitioners in an RPP are employed by separate organizations and operate relatively independently, even as they form trusting

and mutually beneficial collaborations in the context of research projects and grants. Organizations, researchers, and practitioners interested in organizing an RPP for the purpose of long-term mutual learning, continually improving implementation, and generating innovative evidence and practice must work to build and integrate the capacities to support their work together. But doing so requires all parties to operate differently than they otherwise would. Here we offer reflections and recommendations for building the capacities to support these ways of working—for RPPs embedded in the same organization and for nonembedded partnerships as well—that are based on our own experiences. We recognize that we also need more research to investigate the benefits, drawbacks, and ideal mechanisms for building these capacities in research and practice organizations.

First, in any successful RPP, researchers and practitioners will need to spend a large portion of their time functioning at the boundaries of their discipline. In embedded RPPs, this expectation is clear to partners by virtue of the fact that they work for an interdisciplinary organization; indeed, both research and practice partners in embedded RPPs have likely knowingly self-selected into such boundary-spanning organizations and roles. Such an expectation may be less clear to partners in nonembedded RPPs. Key strategies for success in any RPP include aligning around a diverse set of aims and goals, respecting all perspectives, showing understanding for the discipline-specific issues partners face, and allowing partners time to assimilate and accommodate new understandings, methods, and skills. But researchers in particular aren't typically trained to work in these ways, and they're often employed by institutions with incentive structures that privilege scholarly publications over such partnership-building activities. Thus even as RPPs gain popularity, working as part of an RPP remains, in many ways, peripheral. To support the success of RPPs—and perhaps encourage more researchers to choose to work in practice organizations—more graduate education programs will need to include training and experiences that expose junior scholars to embedded partnership work and applied research. This is already standard practice in several doctoral training programs as well as the Institute for Education Sciences' Predoctoral Interdisciplinary Research Training Programs.

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Second, we have found the most success and sustainability when research and practice partners construct the RPP together in ways that produce co-ownership of the processes and results. In an embedded RPP, this kind of co-ownership may occur more readily, because partners working in the same organization may be primed to think of themselves as on the same team. In nonembedded RPPs, achieving true co-ownership of processes and results may take more effort. Indeed, in many traditional RPPs, the research partners drive or own much of the data collection and monitoring. We recommend instead that researchers—whether within or outside of practice

organizations—help practitioners develop the capacity to take over some of the data gathering and processing responsibilities so that they can use this capacity independently or with minimal support from researchers to monitor their implementation and use data to make decisions. Data gathering and processing may represent a new skill set for program leaders and staff and may not be how practitioners are accustomed to working with research partners. Clearly defining and revisiting capacity, roles, and processes within and between the research and practice partners can help support RPPs with a division of labor that draws on each partner's strengths and areas of expertise while also preserving partners' time and independent decision-making authority.

Third, although there are strong examples of RPPs with research and practice partners in different organizations and locations (for example, see the article in this issue by Christina Weiland and Jason Sachs), we've found that having partners who share organizational routines, systems, and culture—indeed, often work in the same office—can facilitate an RPP's success. In embedded RPPs, with research and practice partners working side by side in a single organization, impromptu conversations occur frequently. At Start Early, these informal conversations have led to new insights, raised questions that might not otherwise have been asked, shaped our research and evaluation design, and helped with interpretation of research findings and data. Moreover, conversations about day-to-day program implementation have often revealed program aspects that need to be codified or better specified or ways that metrics, measurement tools, and data sourcing could be improved. For example, Lead Learn Excel's implementation is measured and tracked through a data collection tool that program implementers complete regularly. The extent and magnitude of adaptations made to the program model in practice were only revealed to the embedded research partners through informal, impromptu conversations that took place around the office. We were then able to take this "found" information back to both our practice and to UIC evaluation partners and use it to revise the tool so that it more effectively captured critical implementation details. We thus recommend that research and practice partners make every effort to engage with one another as frequently as possible outside of formal RPP meetings and routines.

Finally, establishing a fully integrated RPP is likely to require a long startup period in which each partner and the partnership together must focus on capacity -building if either partner is to realize many of the benefits. In this way, researchers and practitioners who take this approach must be both patient and generous. But in the long run, taking this approach simultaneously builds an integrated capacity and infrastructure that meets the needs of both practitioners and researchers (rather than just one or the other). Therefore, we recommend that both research and practice leaders take a more active role in obtaining funding that can provide access to the organizational structures, human capital, and infrastructural resources that enable this work. Researchers and practitioners working in an RPP must then plan how to enact RPP processes and collaboratively design, build, implement, and refine the infrastructure to make the RPP successful and sustainable. This may be easier to achieve with an embedded RPP, in which all resources are going to the same organization.

Conclusions

In this article, we've argued that fully integrating research within practice and practice within research shows great promise as a sustainable and effective approach to organizing the capacities needed to support RPPs. Based on our experience, RPPs can more readily develop the qualities Coburn and colleagues argue define the successful RPP (mutualism, commitment to long-term collaboration, a focus on problems of practice, the use of intentional partnership strategies, and trusting relationships) when research and practice capacities are inextricably entwined. We have accomplished this by embedding both partners in a single organization; this structure offers distinct benefits that make embedded partnerships an especially promising approach to generating knowledge and improving the quality of early childhood interventions. We hope that the necessary capacities will become increasingly more common in both research- and practice-oriented organizations, paving the way for new embedded RPPs in years to come.

Endnotes

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