Research–Practice Partnerships in Education

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Abstract

The field of education has seen a sharp increase in the formation and participation of research–practice partnerships (RPPs) over the last two decades. Bringing together two parties in education that share a concern for improved student outcomes but differ dramatically in their approaches to that end, RPPs in education have not only grown in number and type, but complementary organizations and efforts have begun to emerge as well. In this contribution, we explore the reasons for these changes, grounding our work in the organizational and institutional theories literature from sociology.

25.1 Introduction

The world of education research–practice partnerships (RPPs) has evolved dramatically over the last two decades. Perhaps most simply understood as collaborative, mutually beneficial relationships between researchers and practitioners that are formal and long-term in nature, there has been a notable recent increase in their formation and persistence in education. In this chapter, we seek to understand why partnerships have been accepted as an important strategy for potentially addressing the long-established education research-to-practice gap using theoretical foundations grounded in sociology. Guiding our work is a key concept from organizational theory: the description of an organization's environment as a field. In particular, knowing how the field is structured or organized, understanding the individual organizations within the field, and defining the challenges faced by organizations are especially useful for gaining an understanding of organizations. To that end, we explore the following three questions: First, have we actually seen an increased presence of RPPs in education? How might we account for the rapid growth in the number of RPPs in the last two decades given that institutional constraints typically slow adoption of new innovations? Second, how can organizational theory help illustrate why we observe multiple models or types of RPPs in education? Finally, we note that in addition to RPPs, complementary organizations and efforts (e.g., those related to RPPs but are not in and of themselves partnerships) have emerged as well. What role do these complementary organizations play within the larger RPP ecosystem?

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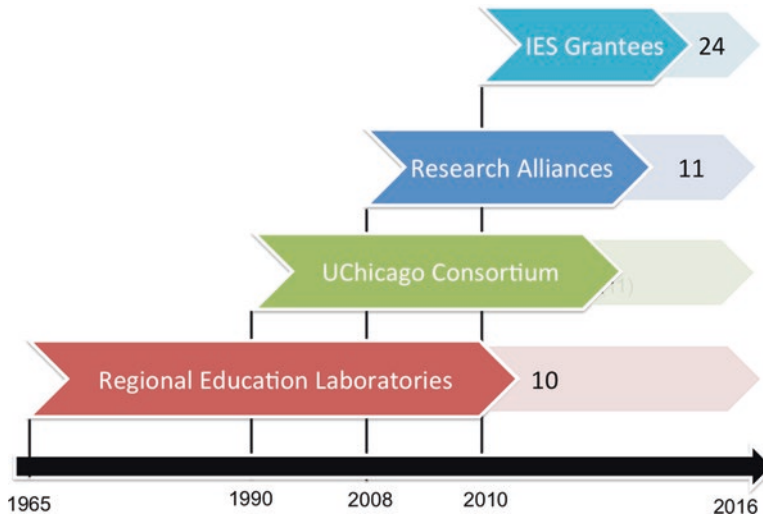e-mail: parcetrig@rice.edu; Ic11@rice.edu;
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Fig. 25.1 Illustration of the development of research–practice partnerships over time

Notes: This figure helps illustrate the growth in research–practice partnerships in education over time. The numbers to the right of each category indicate how many RPPs of that type emerged starting in a particular year. We note the launch of the UChicago Consortium on School Research separately, to demonstrate that until their arrival, there was a virtual drought of RPPs for an extended time. After their launch, several RPPs modeled after the UChicago Consortium emerged ("research alliances"), as well as a large collection of IES-sponsored RPPs

25.2 Is There an Increase in RPPs? How Can Organizational Theory Help Us Understand the Growth Patterns of RPPs?

We begin our discussion by inquiring if there has indeed been a spike in the number of research–practice partnerships (RPPs) more recently relative to their historical development. Quite simply, data suggest this is the case. Figure 25.1 displays the pattern of growth of several types of RPPs over time. As shown in the figure, the IES-sponsored Regional Education Laboratories were the main type of RPP in the U.S. for multiple decades, before the launch of the UChicago Consortium on School Research in 1990. Following a much shorter dry spell, the next wave of RPPs began in the mid-2000s, with several partnerships modeled after the UChicago Consortium as well as a large collection (over 20 new grantees) of IES-funded RPPs emerging onto the landscape. Related research investigating school district decision-making processes also support the notion of a recent increased presence of RPPs (e.g., Honig and Coburn 2008).

Historically, the research-to-practice model that has been the *modus operandi* of many consisted of a one-way conversation between education practitioners and researchers (see Huberman 1994 for a clear illustration of this model). This simple linear model, where basic research leads to applied research, which then leads to the development of products and/or professional practices, and finally, dissemination to educational practitioners and systems demonstrates the difficulty in changing frameworks once they have been accepted as the norm. How we conceptualize the problem with the research–practice gap in education matters because it influences the policy solutions that are pursued. Because of the linear model assumption, for example, there has been special attention devoted to the role of "linking agents," which are organizations or individuals who transform research findings into understandable material for the public (Hood 1982). Efforts to improve this translational gap led to federal funding for the Regional Education Laboratories, for example, which have been around since the 1960s (Coburn and Stein

2010).[1] Other federal initiatives that have emerged based on this framing include the Education Resources Information Center (ERIC) funded by the Institute of Education Sciences (IES), which is a "nationwide information network that acquires, catalogs, summarizes, and provides access to education information from all sources,"[2] as well as three clearinghouses (e.g., National Clearinghouse for Comprehensive School Reform, National Clearinghouse for Educational Facilities, and the What Works Clearinghouse) that serve solely to disseminate different types of research and information in education. On the research front, there has been a large effort to study how to improve district access to research (e.g., Coburn and Stein 2010).

The linear model in practice, however, is problematic because reality quite often deviates from this clearly structured pathway. Weiss (1980) describes a decidedly *non*-linear way in which policymakers interact with research, suggesting that information gradually filters through multiple channels and "creeps" into thought processes. Simply releasing findings to practitioners is therefore insufficient (Spillane et al. 2002). Fleming (1988) documents the myriad challenges explaining why teachers are so unlikely to use research in their activities. Some examples include the overwhelming amount of time it takes to find research and interpret it (hence the focus on translational linking agents mentioned earlier), the slow research process itself compared to the rapidity with which practitioners need information, and the perception of researchers as outside agents that can provide little usable knowledge for the classroom. Huberman (1989) additionally finds that research use within districts is heavily dependent on the social transactions within that setting, including how leaders relate to the research or which parties are implicated in the policy recommendations, for example. In sum, many of these examples reiterate the dichotomous and distinct environments in which practitioners and researchers operate. Changing accepted ways of doing business, however, is oftentimes a slow process. We next turn to institutional theories to help us reconcile the initial slow growth of RPPs in light of the inadequacies of the linear model.

25.2.1 Initial Slow RPP Growth

Institutional theory can at least partially explain the consistent behavioral patterns of organizations (in our case, districts or schools from the practitioner side and academics from the researcher side) (Zucker 1987; Powell and DiMaggio 1991). In this context, "institutions" may have developed around both sets of parties that have likely contributed to the delayed emergence of RPPs. For example, institutional theorists argue that organizations adopt procedures, formal structures, and vocabularies consistent with expectations of what is "acceptable" and "legitimate" given their operating environment. The importance of institutional legitimacy is underscored by its role in ensuring organizational survival: Adopting innovative practices are often viewed as threatening and incompatible with the internal structures of the organization. We next explore how these pressures may have shaped the slow participation of first, researchers and second, practitioners in collaborating within an RPP.

For academics, typical research culture has been notoriously isolated (e.g., "ivory tower"): Building from existing theories, developing new

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[1]Title IV of ESEA authorized the formation of what eventually came to be known as the "Regional Education Laboratories" (RELs). The motivating ideas behind the introduction of the RELs were first, to facilitate the generation of more useful research in education and second, to somehow encourage practitioners to actually use it (Guthrie 1989). In the years since their inception, the RELs have been reauthorized several times and are currently operating 79 research alliances within ten different RELs across the U.S. They are funded by the Institute of Education Sciences (IES) to conduct research, disseminate findings, and to provide training and technical assistance to link research-proven practices with educational practitioners. In their most recent iteration, there will be greater opportunity to engage with research–practice partnerships (Sparks 2016).

[2]See: http://www2.ed.gov/about/contacts/gen/othersites/eric.html.

ones, testing them out, and so forth are activities that have been carried out in concert with other academics or solo. Additionally, academic researchers are subject to other primary objectives, such as meeting tenure, which directly influences their choices over what types of research activities to engage in. Institutional forces such as peer recognition and the potential to improve one's position in his/her respective field may have led to adherence towards these more traditional research inquiries. Indeed, these influences shape how scientists choose to pursue a particular research problem; innovation, in terms of novel methodologies or questions that divert towards a greater focus on practice for example, is perceived as a gamble (Foster et al. 2015). When academics pursue involvement in developing or contributing to an RPP, they are essentially taking a gamble, given the large time commitment that is required, as well as the distinct shift in the types of research questions that could potentially be examined. Thus, we might predict an initial slow growth of RPPs while such entities remain squarely in a "novel" phase. Consider that after the UChicago Consortium on School Research launched in 1990, more than a decade passed before new RPPs with similar arrangements began to emerge. Further complicating matters, researchers generally operate with much longer timelines relative to practitioners, who commonly need information to make policy decisions very quickly. With a set of organizational norms that differ dramatically from those practitioners face, it is not at all surprising that partnerships in education have taken such a long time to "take off" and instead, simpler solutions of "linking agents" have been adopted.

Financial pressures on the university may have also contributed to slow institutional support for RPPs. In the last few decades, institutions of higher education have experienced massive cuts in federal and state funding, impacting research universities the most (Scott and Biag 2016). In addition to the risk associated with pursuing more innovative research paths, funding challenges may have also presented an obstacle to greater investments in RPPs. In particular,

resource dependence theory suggests that organizations respond to external actors who control the resources upon which the organization depends; this seems to apply to universities (Kraatz and Zajac 2001). We would predict that based on this theory, if grant makers at the federal and private foundational levels increasingly include line items for RPP start-up and persistence costs, this might mitigate the reluctance of universities to invest in such organizations. Indeed, the Spencer Foundation just recently launched a new competitive grant program for partnerships.[3] Greater funding opportunities for academic researchers from outside their universities may thus have helped fuel the growth of RPPs.

Finally, other forces, such as policy pressures, may pull universities in directions opposite to the institutional norms or financial pressures. Institutional theorists argue that changes in the external environment can facilitate new logics to spread within a given organization (Berman and Stivers 2016). For example, Berman (2012) documents how changes in U.S. policies to promote science led universities to increasingly focus on the economic value of science. Furthermore, new resources became available to help support this new focus. Within this framework, we might expect a similar pattern for RPPs, as the U.S. government continues to promote the use of evidence to inform decision making for education policymakers through laws such as No Child Left Behind (NCLB) and the Every Student Succeeds Act (ESSA). NCLB (2002) requires evidence from "scientifically based research," while ESSA (2015) has kept the spirit of the law in tact, but has broadened available research to include "evidence based research." Policy changes in the external environment such as these may present new opportunities for researchers to engage with partnerships that were absent before.

Turning our attention to U.S. schools and districts, we begin by focusing on the influence of institutional norms in shaping these organiza-

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[3]See: http://www.spencer.org/research-practice-partnership-program.

tions, and the long-lasting effects that can accompany these forces. With roots in rural areas, one-room schoolhouses in the U.S. functioned as efficient transmitters of basic skills essential for societal success. With the arrival of the industrial revolution, however, educators felt pressure to make education more systematic, mimicking the factory-type model common in the business sector (Tyack 1974). The resulting bureaucratization of the educational system in general was, some would argue, necessary to adequately address current needs. A combination of businessmen, university professors and presidents, school superintendents, and middle-class reformers facilitated the shift to a centralized school system with a top-down structure of school management. Post centralization, school boards were comprised mostly of business people and professionals, as it largely remains today. To be clear, schools and districts in the U.S. were not created with the explicit goal of acting as research and development (R&D) centers, which certainly contributes to the lack of research capacity that still pervades the practitioner side today. With the absence of R&D as a primary function within schools, it should not be surprising that successful practitioner interaction with research has been marred by numerous challenges. Work by Rowan (1982) suggests that an institutional environment characterized as contentious and unfocused (which may commonly occur in schools and districts given the multiplicity of objectives that comes with numerous stakeholders) dramatically slows the adoption of innovative structures.

The culture surrounding the use of research evidence, in general, can also mediate how districts and schools interact with research. For example, Honig and Coburn (2008, p. 594) define evidence use as a process that involves "searching for and incorporating evidence" into decision making. Furthermore, evidence use within districts is more likely when district norms, expectations, and routines encourage ongoing engagement with empirical research (Honig 2003; Honig and Coburn 2008; Massell 2001; Corcoran et al. 2001). However, the practice of evidence-based decision making is arguably not yet common or a "norm" for many

district central offices. This means that new models of professional practice that require central office administrators to break some previously held routines may be necessary to enable a new culture of evidence-based decisions (Honig 2006). Absent those, we would expect a slow adoption of RPPs among school districts to generally be the case.

Beyond the cultural factors or norms that may inhibit districts from embracing research, there are other constraints that may contribute to this deterrence as well. Burch and Thiem (2004) and Reichardt (2000) suggest that central office administrators may lack the human capital and technological infrastructure to engage in evidence-based decision making. Additionally, working knowledge also appears to strongly mediate evidence use. For example, some research finds that district central offices are more likely to search and pay attention to evidence that fits in with their conceptions or conforms to their expectations (Birkeland et al. 2005; Spillane 2000). Individual preferences for certain types of evidence can also play a role (Coburn and Talbert 2006). Collectively, these additional constraints may also lessen the likelihood that a district is willing or able to work collaboratively with external researchers in an RPP.

However, despite factors hindering evidence use, district central offices have long used *some* form of evidence in their decision making. For example, practitioner or "local" knowledge, such as input from principals, teachers, parents, and students, is very common (Gonzalez et al. 2005; Datnow et al. 2002). Districts have also been shown to consult with social science research and to incorporate the use of student-level data to inform decisions (Honig and Coburn 2008; Massell 2001; Massell and Goertz 2002). We would expect the culture of evidence use within districts to continue to evolve, even without the presence of RPPs, especially given the recent passage of ESSA. ESSA partially shifts authority back into the hand of the localities, enhancing the role of state and local policymakers that was previously more restrictive under NCLB (Strauss 2015). In particular, states will have a greater say

in which standards are adopted, greater control over their accountability systems, and greater flexibility over their teacher certification requirements and evaluation systems (Klein 2016). This flexibility creates a larger role for local policymakers. Second, matching NCLB's previous emphasis of utilizing "evidence-based" research in decision making, ESSA also explicitly defines this term and describes four levels of rigor for research. Taken together, the need for evidenced-based interventions and leeway in standards adoption creates a unique demand appropriate for RPPs to meet. As a result, ESSA contains features that may possibly lead either to a greater number of RPPs or create a larger role for existing RPPs.

25.2.2 Recent Burgeoning RPP Growth

Growing concern over the large gap between research and practice and the failures to address it began to gain traction in the late 1990s and early 2000. Huberman (1994, p. 14) reports on the "state of the art" of knowledge utilization in education and recognizes "the proliferation of centers, laboratories, intermediate units, and collaborative enterprises…is a sign that the process of 'knowledge transfer' is active in several forms." He further describes the importance of "sustained interactivity" between researchers and practitioners in producing research itself, going so far as to describe this interaction as "mutual" in its benefits to both sides. While Huberman critiques and offers changes to the aforementioned linear research-to-practice framework, he stops short of naming this new enterprise a "partnership." In 2003, a major task force from the National Research Council investigating the current approaches to addressing the research-to-practice gap produced "Strategic Education Research Partnership," a report offering an actionable change to business as usual (National Research Council 2003). At this point, the first education research–practice partnership that consisted of a university and school district pairing, the UChicago Consortium on School Research,

had existed for over a decade. Additionally, the reauthorization of ESSA and the NCLB of 2001, led to a greater need for localized capacity to conduct research. The NCLB Act's heavy use of the phrase "evidence-based" for describing what types of education policies should be implemented created further incentives for school districts to invest in research-related skill sets (Feuer et al. 2002). How, then, did the collective efforts on these many fronts influence the growth of partnerships?

First, there was recognition that the current state of affairs was inadequate. The critique of long-held institutional norms led the way for new ideas on the role of practitioners and researchers in the research process. Second, it is likely that the perceived success of the UChicago Consortium led to new definitions for "legitimacy" among these types of institutions. Kramer (1981) describes four key roles that non-profit organizations tend to perform that sets them apart from other sectors: vanguard role, value guardian role, advocacy role, and the service provider role. Of these, the vanguard role, where experimentation with innovative approaches to processes or programs leads to non-profits serving mainly as agents of change best describes early RPPs. If these organizations are proven successful (i.e., the longevity of the UChicago Consortium), other agencies are more likely to adopt them. Universities, which have typically been inflexible with their institutional rules as described earlier, may have shifted their stance somewhat given the reputation of the University of Chicago, for example. Moreover, increased opportunities for funding (i.e., through the Spencer grantee program mentioned earlier, as well as numerous IES-sponsored RPP initiatives separate from the RELs) have accompanied these trends.

Third, changes to the external environment via NCLB likely contributed to the change in institutional norms as well. Tolbert and Zucker (1983), for example, find that when coercive pressures (either direct or indirect pressures to conform to institutional expectations) are large, such as the changes brought in by NCLB, organizations are quick to adopt new structures. More specifically, these accountability policies

required districts to invest more heavily in their longitudinal data systems in order to regularly use student performance data as required (Kerr et al. 2005). Other federal grants such as the one provided by IES to help support statewide longitudinal data systems have also contributed to their increased presence. This particular change opens new doors for researchers to interact with practitioners, given the supreme importance of administrative data in conducting research. Taken together, then, these may have influenced the acceptance of and the growing interest in RPPs as a promising mechanism to address the research-to-practice gap.

25.3 What Are the Different RPP Models? Why Are There Multiple Models/Types of Research–Practice Partnerships?

Moving from describing the growth in the sheer number of partnerships that exist today, we next turn to a brief presentation of some of the models that have currently been identified in the literature, and then offer a theoretical exploration into why we might observe multiple types of RPPs.

Currently, to the best of our knowledge, there is only one study that has attempted a typology of the different types of RPPs. A white paper authored by Coburn et al. (2013) and commissioned by the W. T. Grant Foundation identifies three different types of RPPs: research alliances, design-based partnerships, and networked improvement communities. We briefly define each of these:

Research alliances: are partnerships between a school district(s) and a research institution(s) such as a university or non-profit. By their definition, research alliances are long-term commitments where the researchers pursue questions of policy and practice that are relevant to both practitioners and researchers (Coburn et al. 2013). The researchers share the research findings with the district, the community, and other stakeholders and this sharing feature is part and parcel of the alliance commitment. Coburn and colleagues consider both the Regional Education Laboratories (RELs) and partnerships such as the UChicago Consortium on School Research to fit within this category.

Design-based partnerships: are structurally very similar to research alliances, in that they are typically comprised of district and university pairings, such as the Middle-School Mathematics in the Institutional Setting of Teaching (MIST) project at Vanderbilt University. The authors chose to distinguish this type of model based on their scope of work, which departs from that of the research alliances in that it tends to be more narrow (e.g., problems of practice as they relate to curriculum and instruction only). Design-based partnerships feature an iterative research process that focuses on developing as well as testing conjectures; this additional work towards formulating and developing theory is also not commonly part of the research process in alliances (see Barab and Squire 2004 for a more detailed introduction of design-based research).

Networked improvement communities: are networks of districts and researchers that collaborate on one problem of practice with the goals of understanding what works best, where, and in what context (see Bryk et al. 2011 for a more detailed introduction). One of the defining features of this type of RPP is that it involves the collaboration of many districts to exploit differences in contexts in order to improve knowledge surrounding implementation of programs and policies. The concept of "improvement science" is at its core, which is a model adapted from the healthcare industry. The key example of this RPP type is the Carnegie Foundation's Networked Improvement Communities.

This white paper is an excellent first attempt at describing the types of RPPs currently operating in education. Note that there are likely several other models in operation today that have not been captured here since the publishing of the paper, with more likely to develop in the future. To help illustrate the myriad ways a partnership

Table 25.1 This table presents a simplified illustration of the numerous ways research–practice partnerships can differ across a multitude of partnership dimensions

Length of partnership commitment
• short, medium, long-term
Researcher side participation
• single or multiple universities, research institutions, or non-profit organizations
Practitioner side participation
• number of school districts, level of school leader participation (superintendent/principal/teacher)
Policy side participation
• state, local, school, classroom
Research agendas
• topic specific (narrow focus), collection of topics (broadly defined)
Intensity of collaboration
• Periodic check-ins vs systematic, regular meetings

may be arranged we offer an organized list of individual characteristics that can vary among partnerships in Table 25.1. With a greater number of RPPs emerging and growth in this field likely continuing, a more rigorous typology allowing for additional nuance across models may be possible in the future.

25.3.1 According to Theory, What Might Account for Different Partnership Models?

It might first be instructive to define how research–practice partnerships are similar. They are best considered non-profit organizations, given that their objectives rarely (if ever) focus on maximizing profit: They do not operate in a typical market featuring customers and suppliers, where supply and demand determine price, and efficiency can be measured through clear measurement of production. On the other hand, RPPs also fail to be classified as a pure government agency, where survival is directly linked to satisfying constituent preferences and revenues are generated from a mandated tax base. Structurally speaking, they commonly include representatives from at least two sides of the education realm: those who

specialize in researching education (i.e., academics, scholars, and generally, those working either within a university or a research institution) and those who specialize in administering education (i.e., practitioners involved at all levels of education, such as teachers, principals, and district or state leaders). Moving beyond these similarities, we next explore how different social, political, and institutional conditions may give rise to organizational heterogeneity across RPPs.

One can draw from different disciplines to explain organizational heterogeneity; this approach can shed light on the impact various aspects of the organizational form has on strategy or production. For example, in economics, the objectives of the firm can give rise to differences in structural forms, as can the differential costs associated with varying production processes adopted. Similarly, sociologists also recognize the importance of organizational goals in shaping structures and strategies, but they additionally consider how leaders' backgrounds and cultures influence the identity of the organization (Fligstein and Dauter 2007). These basic concepts can help us initially understand the visible differences in how RPPs are arranged and the scope, areas of, or approaches to research they specialize in. For example, the Houston Education

Research Consortium (HERC), a research alliance that is housed at Rice University and features the Houston Independent School District as its practitioner partner, was founded and is currently directed by one of the authors of this work, Ruth López Turley, who is trained in sociology. The research output produced by HERC will thus be framed within the context of sociology and the methodologies utilized throughout the projects will be those commonly found in the field of sociology. On the other hand, MIST (mentioned earlier under the design-based partnership model) is housed in the College of Education at Vanderbilt University. The project's co-PIs are Erin Henrick and Paul Cobb, who are both housed within the Department of Teaching and Learning and are trained specifically in education. The scope of the MIST project is thus much more narrow, focusing on improving the instructional practices of math teachers.[4] Finally, the networked improvement communities of Carnegie arrive at their structural arrangement along a different path altogether. A specific problem of practice is first identified and a network then forms consisting of a variety of parties interested in working on the problem. Organizational goals overall and more specifically, the background and training of the leader, can, at least initially, explain some of the differences in RPP models.

Within organizational theory, we can further identify at least two ways to frame the question of organizational heterogeneity, using either organizational ecology or institutional theory. We explore each in turn.

Organizational or population ecology, an area of research first introduced by Hannan and Freeman ([1977](#), [1984](#)), takes the view that the rational adaptation model popular in economics overemphasizes the role of firm adaptation. Instead, this approach suggests that the environment in which organizations operate presents a fixed constraint; essentially, the environment selects which types of organizations survive and which die. To explain the emergence of heterogeneous organizational forms, Hannan

and Freeman ([1977](#)) posited that differential opportunities in the market, in terms of resources available, directly shaped the birth and survival of organizations. Survival is ensured by maintaining good relationships with already-known contacts, predictability in meeting funding targets, and relying on an accepted approach producing output.

The availability of resources deserves special attention in this case. RPPs are strongly dependent on the availability of funding; therefore, the number and types of potential funding sources will have large ramifications on the birth and subsequent survival of RPPs and tracks taken. Because there is external control over resources, RPPs become interdependent on this environment. More generally, what this means is that there is an element of competition among RPPs that may not exist otherwise. The degree of competitive pressure for resources will likely vary widely across localities; how rural or urban a city is, the number of academic institutions that exist, as well as the availability of private foundations serving an area are all examples of how competition may be affected. Greater competitive pressure for funding may lead to larger differences in partnerships (i.e., to stand out from the crowd), while less competitive pressure may allow for imitation of models perceived as successful. Because RPPs are not self-sustaining organizations (and will likely never be, given the absence of a product from which to generate revenues), they are implicitly wedded to the foundations that support their work. The objectives and preferences of the foundations themselves, then, are likely to have a strong influence on the probability of birth and survival.

In addition to the role of resources, we can also highlight the general pressures that arise from the environment as a whole. The number of organizations that can co-exist in an environment is dependent on the *environmental carrying capacity*, which is itself a function of the social, economic, and political conditions and available resources (Anheier [2005](#)). Because many things can affect the environment's carrying capacity, this in turn will affect the dynamics of organizations over time. More precisely, the environment will affect

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[4]See http://peabody.vanderbilt.edu/departments/tl/teaching_and_learning_research/mist/ for more information.

how organizations choose to allocate resources; this in turn will produce variation across partnership strategies. For example, certain departments within universities may be more amenable to the notion of a partnership than others. If the sociology department is willing to provide support for the creation of a partnership, then the tools of that particular discipline will shape and influence how the research work is approached within the partnership. Furthermore, tenure rules differ across institutions. Qualifying activities, then, could either be limited or numerous, and these environmental constraints will alter features of the partnership. Alternatively, the current research capacity and preferences of a school district will also create pathways to some approaches and not others. Along the practitioner side, there is a greater propensity for leadership turnover, which gives rise to environmental instability. Previous relationships and practices that may have held promise for a partnership may have to change with immediacy. The infinite combinations of these two environmental features could conceivably give rise to multiple types of partnerships. In particular, different environmental characteristics can help describe the shifts in partnership approaches that have occurred more recently (i.e., the introduction of design-based research and the networked improvement communities).

A second way to approach the question of organizational heterogeneity is to use institutional theory, a research area advanced by the work of DiMaggio and Powell (1983), Meyer and Scott (1983), and Meyer and Rowan (1977). In contrast to the assumption in population ecology of a fixed environment, this line of thinking hypothesizes that the environment may be "at least partially a social construction" (Fligstein and Dauter 2007, p. 111). That is, the environment is comprised of other related organizations that could influence the strategic behavior of a particular firm. DiMaggio and Powell (1983) argued that in this context, organizations tend to become more similar over time through three different isomorphic processes: imitative or mimetic, normative, and coercive.

Under the first type, imitative or mimetic isomorphism describes how organizations imitate or copy others that are perceived to be successful. Perhaps one example in the RPP context we can highlight is the recent surge in the number of research alliances that resemble the UChicago Consortium on School Research. Founded in 1990, the UChicago Consortium was the only RPP of its type for approximately 15 years; during that time, it built a strong reputation among many involved in education for producing rigorous, relevant, and timely research that has made important impacts on local decision making. More recently, several RPPs modeled after the UChicago Consortium have emerged: the Baltimore Education Research Consortium (2006), the Research Alliance for New York City Schools (2008), the Los Angeles Education Research Institute (2011), and the Houston Education Research Consortium (2011), just to name a few.

Normative isomorphism describes the process by which firms change due to external pressures initiated by professions or legitimation directed by professional practices. These types of forces lead organizations to conform to accepted ways of practice, given a particular profession or even network of professionals. While new to the RPP ecosystem, the National Network of Education Research–Practice Partnerships, a network connecting several types of RPPs in education, may eventually influence how individual RPPs emerge or change over time.

Finally, coercive isomorphism relates to the changes organizations must undergo due to organizational, political, or social pressures of stakeholders they are dependent upon. RPPs are particularly susceptible to this type of isomorphism, given the previously documented reliance upon foundational dollars. Thus, certain models of RPPs may be more or less common simply due to the financial resources they are dependent upon. For example, several of the design-based research partnerships share a STEM-related focus; unsurprisingly, the National Science Foundation also funds many of these. Coercive isomorphism may also arise from the mere fact that RPPs operate in a new space, where researchers and practitioners must come together in service to solving problems of practice. In this case, relevant stakeholders include not only the practi-

tioners themselves, but local decision makers, students, and communities-at large. Indeed, Roderick et al. (2009, p. 2) describe the founding of the UChicago Consortium as follows:

> Given the magnitude of this experiment, the advocates of reform—largely the foundation community and local reform organizations—believed it was important to establish an independent organization that would be charged with conducting independent, objective evaluations of the progress of reform and engaging in research that would assist local schools in developing their own strategies. Because universities seemed like natural partners in this effort, the Chicago Public Schools (CPS) invited local universities to become involved.

Furthermore, the authors also illustrate the importance of satisfying stakeholder needs through their work:

> This new role—to provide a research-based framework (but not a blueprint) for improvement, to provide critical measures of performance and feedback mechanisms to individual schools, and for researchers to engage in the core questions of what it will take to improve performance—has had a significant impact in shaping the work of CCSR [the UChicago Consortium] and the role of research in the city. CCSR researchers do not just comprise an independent group that does studies on schools and occasionally announces findings. Rather, our studies and products (e.g., individual school reports) are resources that practitioners use to manage their own improvement efforts. (Roderick et al. 2009, p. 2)

Over time, the UChicago Consortium has had to evolve, and as we might expect, they tie these changes explicitly to stakeholder objectives. Moreover, they attribute their success specifically to this type of change:

> Over time, CCSR has evolved into a more complex organization…But key to the success of CCSR has been a consistent focus on these initial themes: (1) research must be closely connected over time to the core problems facing practitioners and decision makers; (2) making an impact means researchers must pay careful attention to the process by which people learn, assimilate new information and ideas, internalize that information, and connect it to their own problems of practice; and (3) building capacity requires that the role of the researcher must shift from outside expert to interactive participant in building knowledge of what matters for students' success. (Roderick et al. 2009, p. 3)

To close this section, we summarize the discussion by reinforcing the notion that many variables can contribute to organizational heterogeneity. Furthermore, these differences can arise at any age of the organization, from birth and over time. More research investigating how RPPs differentiate is needed, especially to further our knowledge of what an "effective" RPP may look like.

25.4 Where Does the Development of the Field Currently Stand?

We have discussed the growth in the number and types of RPPs across the U.S. in the last two decades and provided possible reasons for these trends grounded in organizational theory from sociology. In this next section we widen our focus to examine the field of RPPs as a whole and ask: Where do we currently stand? If we think of RPPs as an "industry," at what stage in the lifecycle do we find ourselves? What can we say about the development of the field given the rise of complementary organizations and, most recently, a formal professional network of education RPPs?

From the larger perspective of the field of RPPs, it is likely that this "industry" is still in its infancy. The number of RPPs (total) across the U.S. suggests they are still relatively uncommon among approaches that connect research and practice.[5] Hannan and Carroll (1992) suggest that the pattern of organizational density over time for several industry types follows a regular path: long, slow growth in the initial phases, followed by an explosive period of growth, and later, stabilization or perhaps even decline. Within this context, RPPs seem to be on the cusp of explosive growth (e.g., Sect. 25.2 of this chapter, which

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[5]Note: Currently, no resource, such as a directory, exists on the number of RPPs currently in operation. The NNERPP website (nnerpp.rice.edu) contains a list of partnerships that are members of its network (which includes most of the research alliances in operation today), while the R + P Collaboratory website (researchandpractice.org) includes a list of DBIR-type partnerships.

provides an overview of the recent growth in RPPs). Indeed, recent research by Coburn and Penuel (2016, p. 1) on the state of the field describes RPPs as a "promising approach" that is currently witnessing an uptick in interest and funding. Despite a noticeable increase in RPPs as an organizational form, they are arguably not yet a "business as usual" approach. The majority of states and school districts across the U.S. do not participate in RPPs and they are particularly scarce or nonexistent in more rural areas.

25.4.1 What Can We Say About the Development of the Field Given the Rise of Complementary Organizations?

Across the organizational theory literature, there are a few key concepts that can help us better understand the current state of the RPP industry and where it might be headed next. In an industry's infancy, new organizations must develop several innovations—not just the organizational structure itself or the process of work—but also new workplace roles, without having much prior knowledge to build off of and within a larger context that is not quite yet accepting of these ventures (Hannan and Carroll 1992; Stinchcombe 1965). These early challenges may partially explain why the beginning stage of a new industry is characterized by a long, slow build: Moving from innovative, developmental production phases to systematic, efficient processes takes time, while the external environment in which the organization operates may provide additional barriers to acceptance of new norms. To ensure survival, institutional theorists have long suggested the legitimacy of the new organizational form must be expanded and directly addressed (e.g., Meyer and Rowan 1977; Meyer and Scott 1983; DiMaggio and Powell 1991). More recently, Aldrich and Fiol (1994, p. 648) distinguish among two types of legitimacy, especially salient to entrepreneurs: *cognitive legitimation*, describing the knowledge building that must occur around the new organi-

zational form's processes, structure, and services, and *sociopolitical legitimation*, referring to "the process by which key stakeholders, the general public, key opinion leaders, or government officials accept a venture as appropriate and right, given existing norms and laws."

The inception of new ventures may naturally be accompanied by low cognitive legitimacy: "Without widespread knowledge and understanding of their activity, entrepreneurs may have difficulty maintaining the support of key constituencies" (Aldrich and Fiol 1994, p. 649). The authors furthermore suggest that in the absence of developing cognitive legitimacy, especially as it relates to reaching a collective consensus regarding best practices, standards, or procedures, new entrants into the field risk possible failure. This could reflect poorly on the organizational form as a whole, since potential funders or future RPP leaders will be watching closely to see how individual organizations perform. This conceptual framework can help provide some grounding to explain the recent emergence of several peripheral efforts related to RPPs, which we will call "complementary organizations." We define these organizations to be those that support the work of RPPs in some way, but are not in and of themselves partnerships.

With respect to cognitive legitimation, we argue that complementary organizations work to advance the collective knowledge of RPPs that may indeed contribute towards creating conditions where partnerships are more likely to become permanent fixtures in the educational arena. First, the number of individual research studies on RPPs has exploded in the last two decades.[6] This may partly be due to the simple fact that there are more RPPs today relative to 20 years ago, but it could also be argued that those working within RPPs are eager to produce knowledge that helps support their new venture. Second, two new IES-funded research centers

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[6]Conducting a simple Google Scholar search on "research practice partnerships" + education and restricting the results to the years 1960 through 1989 returns zero results. When changing the yearly range from 1990 to 2000, ten results are listed. Finally, adjusting the yearly range once more, from 2001 to 2016, nearly 300 articles are returned.

focusing on understanding the connections between researchers, practitioners, and policymakers have recently emerged. The National Center for Research in Policy and Practice (NCRPP), housed at the University of Colorado, Boulder and the Center for Research Use in Education (CRUE) at the University of Delaware, are likely to increase knowledge around RPP work into the next decade.[7] Third, three additional resources exist to help develop and support those interested in partnership work. The R + P Collaboratory[8] at the University of Colorado, Boulder, is an organization that helps support STEM-related work within RPPs as well as DBIR-type partnerships, while the William T. Grant Foundation has organized a micro-site[9] of RPP-related information and materials.

The third resource and most recent entrant into this group of complementary organizations and the one most intimately known to the authors is the National Network of Education Research–Practice Partnerships (NNERPP), which aims to construct a connected web of education RPPs across the country to support and develop RPPs.[10] As we will focus on the "network" aspect of this organization shortly, in this section we highlight its role in expanding cognitive legitimacy. Because RPPs require many skills for which education researchers, education agency leaders, and decisionmakers are typically not trained, these collaborations tend to be challenging to set up and maintain. Although researchers often collaborate with other researchers, it is less common for them to collaborate with education agencies in long-term partnerships, as noted earlier. Substantial organizational differences between research institutions and education agencies can lead to a prohibitive working environment.

Members of these different organizational forms may often not be fully aware of the extensive dissimilarities in terms of timelines, communication processes, and internal working structures, to name a few examples. Given these potential barriers to success, NNERPP has made one of its objectives to systematically collect, develop, and share best practices from a variety of RPP models. This is directly in line with raising the cognitive legitimacy of the approach, which may be especially salient at this stage in the industry's development. We hypothesize that collectively, these complementary organizations are likely to directly impact the cognitive legitimacy of the field overall and will more than likely make it easier for new entrants to emerge and develop, given the relatively larger pool of knowledge they will be able to draw from.

Commenting on the state of the field with respect to sociopolitical legitimation is somewhat more challenging. In terms of measurement, Aldrich and Fiol (1994, p. 648) suggest evaluating the degree of this type of legitimacy by "assessing public acceptance of an industry, government subsidies to the industry, or the public prestige of its leader." It is likely that sociopolitical legitimation is still growing among stakeholders. Of the scant evidence we can point to that suggests this may indeed be occurring, we note the increase in opportunities for funding. For example, as mentioned previously, the Spencer Foundation launched their first ever competitive RPP grants award in 2015 while IES has created new initiatives to fund RPPs, in addition to a reorganization of the RELs towards a greater RPP orientation. The founding of NNERPP itself also lends support to the idea that RPPs are gaining sociopolitical legitimacy, especially if we consider that it is financially resourced by five different private foundations. From the governmental perspective, we note the increased demand from policies mandating greater use of evidence-based research. While not explicitly directed at RPPs, the shift towards connecting research and practice could arguably be a form of sociopolitical legitimation. Generally speaking, however, we might expect sociopolitical legitimacy to be

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[7] Given IES' role in supporting the Regional Education Laboratories, these two centers should come as no surprise, lending support for the notion that advancing cognitive legitimation matters.

[8] See http://researchandpractice.org/ for more information.

[9] See http://rpp.wtgrantfoundation.org/ for more information.

[10] See http://nnerpp.rice.edu for more information.

positively impacted as cognitive legitimacy surrounding RPPs increases.

We next turn our discussion to the "network" aspect of NNERPP: Why does the development of a professional network of RPPs merit attention here? What does it suggest about the state of the field overall or where it might be headed? While the research in the previous part of Sect. 25.3 is more connected to organizational sociology (i.e., institutions), this next subsection relates more closely to economic sociology (i.e., networks). They are often two distinct research areas but share connections, as we will see. By shifting the lens slightly, we hope to further our understanding of the important roles different actors play within the RPP ecosystem overall.

We begin our discussion by exploring the definition of a "network." Podolny and Page (1998, p. 59) broadly define a network as "any collection of actors (N ≥ 2) that pursue repeated, enduring exchange relations with one another and at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange." These authors distinguish between a market, where exchanges are not necessarily enduring but instead, "episodic," and hierarchies, where there is a clear order to authority, especially regarding the resolution of disputes. Other authors have been more explicit, defining a network as a collection of actors or nodes (in our case, RPPs) that are connected by specific ties (Borgatti and Halgin 2011; Smith-Doerr and Powell 2005). In these cases, ties among nodes are typically descriptive of the relationship between two nodes; for example, in NNERPP's case, the ties may represent a collegial relationship among RPPs. Research in this area has focused on characterizing the structural aspects of a network (e.g., Burt 1992), while others have prioritized an analysis of interorganizational connections and their potential effect on organizational behavior (e.g., Granovetter 1985). A third perspective moves away from previous assumptions that organizations within a network are essentially uninvolved and instead, examines how organizations actively rely on networks as a wellspring of resources (e.g., Gulati et al. 2011). In this subsection, we adopt the third framework,

and consider how a professional network of RPPs, such as NNERPP, might matter for individual RPP behavior or performance.

25.4.2 What Do Networks Provide?

First and foremost, networks establish a clear mechanism through which member organizations can access a wide range of resources (Burt 1992; Gulati et al. 2011; Smith-Doerr and Powell 2005) as well as provide order to an otherwise disconnected collection of related organizations (Burt 2000). Smith-Doerr and Powell (2005, p. 16) suggest "organizations forge connections to other parties to access relevant expertise. Access to centers of knowledge production is essential when knowledge is developing at an unprecedented pace." While knowledge about the internal workings of an RPP is developing, it is not necessarily developing rapidly or systematically but haphazardly. The UChicago Consortium is one example of an RPP that has written about their founding (cf. Roderick et al. 2009) while the R + P Collaboratory, the W. T. Grant Foundation RPP microsite, and NNERPP have created or made available various toolkits to help those interested in pursuing this work. Several additional resources not mentioned here exist across various other websites, but are less known. To access these knowledge centers, however, those interested in launching an RPP would first need to know where to find them and second, may find that the resources, while helpful in their own right, are not quite sufficient. Indeed, the authors have often fielded phone calls, in-person meetings, and online video chats from interested parties seeking "relevant expertise," as Smith-Doerr and Powell describe. Thus, while other, more static resources are available, the dynamic nature of interacting with others may be quite difficult to replace. The network itself becomes a centralized hub, then, that facilitates an arguably more efficient distribution of information and knowledge than individual organizations working alone. This is one reason why we might expect NNERPP to move the field forward more quickly than an RPP ecosystem without it.

Second, in addition to its power of dissemination, other research points to the role networks play in supporting innovation (Bryk et al. 2011; Goldsmith and Eggers 2004; Podolny and Page 1998; Powell 1990). Smith-Doerr and Powell (2005, p. 17) go so far as to characterize the potential for networks to become a "locus of innovation" due to the fostering of meaningful relationships across member organizations that goes beyond a simple knowledge exchange. Furthermore, Smith-Doerr and Powell (2005, p. 25) posit that "[m]uch research has suggested that close interaction among divergent organizations can produce novel recombinations of information leading to greater innovation and learning (Cohen and Levinthal 1990; Powell 1990; March 1991; McEvily and Zaheer 1999; Stuart and Podolny 1999; Ahuja 2000)." In the present case, there are "divergent" organizations along two lines: First, within each individual RPP, there are at least two different institutions involved (i.e., university and school district), and often times, more.[11] Thus, each individual RPP is essentially a mini-network of its own. The close proximity within which each institution works together because of the partnership commitment is very promising for the potential to produce innovations. Second, NNERPP itself consists of a collection of RPPs that differ in terms of arrangements, geographical location, age, size, research approaches, and breadth of topics analyzed.

NNERPP has further indicated that two of its priorities include the facilitation of cross-partnership collaboration and second, the synthesis of research findings produced by RPPs and the building of new knowledge based on RPP research. Education leaders and researchers alike can benefit from other partnerships' research practices and findings. Research produced by RPPs can and should be synthesized in a manner that enables researchers and policymakers from all over the country to strategically build on that knowledge and use it to develop novel solutions to persistent problems of practice. An emerging field of research that studies the relationship between research and policy for district/state improvement shows evidence that research produced by RPPs is likely to be more beneficial than research produced outside of RPPs, not only because researchers are more likely to produce work that is aligned with district needs but also because district leaders are more likely to view the research as credible and directly applicable to their context (e.g., Coburn et al. 2009; Honig and Venkateswaran 2012). However, there is mixed evidence that districts engaging in RPPs use research in decision making more consistently than districts not engaging in RPPs, and one possible explanation is that it is difficult for researchers and district leaders to learn from one another (Turley and Stevens 2015). Coburn et al. (2013, p. 25) conclude: "What is needed is a more robust dialogue in which district leaders, researchers, policymakers, and funders speak candidly about the strategic trade-offs partnerships face and the resources that are required for success." By organizing these syntheses through a network, greater diffusion of knowledge and ideas that may then spur innovative solutions to current problems of practice may be possible.

To close this section, we circle back to the question of why network analysis may be relevant to the study of RPPs specifically, and to organizational forms, generally. Owen-Smith and Powell (2008, p. 600) suggest that "[n]etworks are essential to fields in at least two senses: they are both a circulatory system and a mechanism for sensemaking. Fields are shaped by networks, which condition the formation of relationships and help establish their consequences." Furthermore, the authors also write that "[w]hile institutions shape structures and condition their effects, networks generate the categories and hierarchies that help define institutions and contribute to their efficacy. Thus, any effort to understand institutional processes must take networks into account, and vice versa" (Owen-Smith and Powell 2008, p. 594). Additionally, complementary partnerships may forge a path for further network establishment. It is possible that networks may feed back into the lifecycle process of RPPs and may help further establish normative culture around RPPs.

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[11]For example, some RPPs also partner with community non-profit organizations or non-university research institutions.

25.5   Conclusion

We have seen growth both in the number and type of research–practice partnerships (RPPs) in education over the last two decades, as well as the emergence of complementary organizations and even the launch of a professional network of RPPs, all suggesting that the RPP model is gaining traction as a potentially useful way to connect research, policy, and practice in education. We have explored the reasons for these changes using many organizational and institutional theories found in sociology and what they might mean for the future of RPPs. We framed our analysis across multiple levels: At the firm-level, we provided a historical foundation to explain the rise of RPPs and additionally gave a current description of the variety of RPP models in existence. At the industry-level, we have explored how organizations that are not themselves RPPs are situated within the industry and how they may complement the work of partnerships and more broadly, the field. Given limitations in space and scope of work, we aimed to provide the reader foundational knowledge from which one can begin to think more deeply about the evolution of research–practice partnerships and the promises they hold for the future in education. In this final section, we leave the reader with several unanswered questions that will require further analysis and consideration in the coming years, and will likely affect the continued growth and existence of this organizational form.

First, defining the conditions that constitute "best practices" for an RPP is still very much in development. Feedback loops are an essential component to learning more precisely about "what works," but these have been sparse for a couple of reasons. From the perspective of innovation, multiple cycles of success and failure (e.g., closure of the organization) have not yet occurred in this industry, mostly due to the relative newness of the organizational form. Second, and perhaps more importantly, there is currently no consensus about how to define RPP "success" or the features or outcomes that make

an RPP "effective."[12] Because several different models of RPPs exist (with greater variety in structural arrangements likely occurring over time), this also adds complexity to the issue. Should all be judged equally? The literature on RPP failure is equally sparse. What conditions lead an RPP to fail or close, for example? The next stage of the field will require a more explicit definition of organizational performance.

Beyond constructing an accepted definition of success/failure, the interim process of how RPPs evolve over time is not well known, either. For example, how does organizational change occur or what leads to organizational change? There is also, of course, the possibility that RPPs change very little over time. Because there are typically at least two distinct types of institutions that come together to form a research–practice partnership, there are internal and external pressures affecting multiple units within the partnership, which could individually and collectively lead to very different types of changes over time. Analysis of this kind is not straightforward. For those interested in implementing continuous improvement processes as they relate to RPP performance, what types of organizational policies would be most appropriate? Outside of the institutional forms that make up the RPP, there is also the larger external environment to consider. What political contexts or conditions are important for fostering future growth of individual RPPs and the field as a whole? Addressing these questions with rigorous research will likely be important for the overall survival of this organizational form.

Finally, it is important to note the dual roles that collaboration and competition between RPPs can play with respect to individual organizational

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[12]For example, some have argued that the UChicago Consortium has been a model for RPP success. It is not clear if this accolade refers to its longevity within the industry or due to the strong reputation it has developed over time in being an exemplar for how RPPs can work, or other aspects of the partnership. Although these features may be indicators of success, it should be noted that our general knowledge of RPP effectiveness is still in its infancy.

health and to the larger field. Is it possible for RPPs to continue to learn from one another and remain in a relatively collaborative space? Or will increased competition for funds inhibit the type of knowledge sharing that could provide beneficial growth to the field? Hannan and Carroll (1992, p. 13) suggest that generally speaking, there are "limits to the longevity of firms." One possible explanation for this constraint has to do with the tension between legitimation and competition: To survive initially and to ensure field growth, organizational forms must address legitimation. This often leads to collaboration since systematic knowledge collection around the organization and diffusion of this information is particularly useful for raising legitimation. As a larger number of organizations emerge, however, competition for a variety of limited resources (e.g., financial and human capital related) places greater pressure on the survival of any given organization. This may preclude some organizations that may otherwise have supported others from sharing practices or knowledge.

What, then, can we conclude about the RPP landscape given these important issues? Given the relatively young age of the industry overall, some of these questions will require more time in order to be adequately addressed. Rigorous research examining RPPs of all types is just now commencing (for example, the two IES-funded research centers mentioned in Sect. 25.3). In general, because the interest and momentum in RPPs as a mechanism for connecting research, policy, and practice is currently in an upward trend, we are optimistic that the creation of knowledge around these approaches is likely to grow.

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