A Developmental Evaluation of Research-Practice-Partnerships and Their Impacts

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Abstract

Research-practice-partnerships (RPPs) have arisen as a potentially powerful mechanism for school improvement; however, there is little work how to evaluate RPPs. This study investigates how four RPPs are addressing impact by a) document analysis of metrics ($N = 123$) being used to assess partnerships, and b) interviews exploring how network leads ($N = 11$) and policymakers ($N = 3$) conceptualize partnerships and their impact on the frontlines. Findings suggest that while metrics being used provide a necessary baseline for the number and types of partnerships, more robust methods are needed to capture the quality of interactions and to strategically inform network development. The discussion advocates for network improvement through sharing cases of failures (alongside exemplary cases) to maximize learning, and for the use of developmental evaluation to explore the impacts of RPPs.

Keywords K-12 education;Research impact; Research-practice-partnerships; Knowledge mobilization; Networks
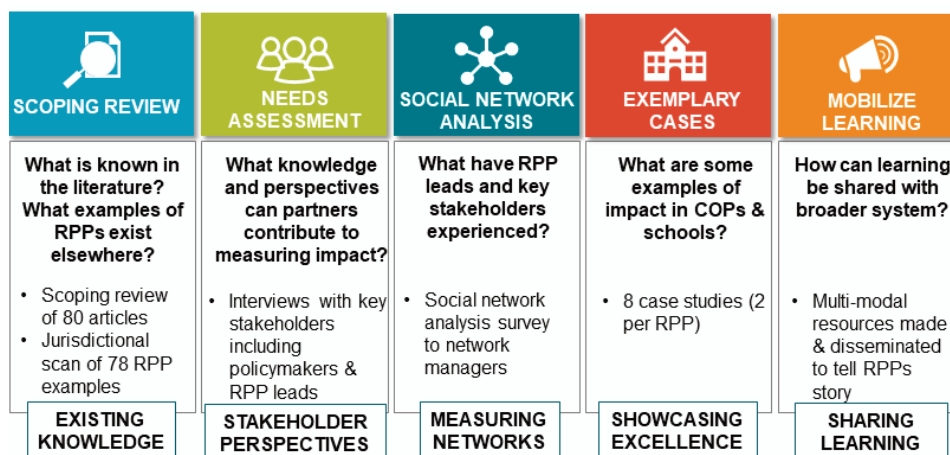
Introduction

Globally, kindergarten to Grade 12 (K–12) education systems are grappling with how best to integrate research and evidence into policy and practice (efforts referred to here as knowledge mobilization [KMb]) on the frontlines of classrooms so that teachers, students, and communities can benefit (Cooper, Levin, & Campbell, 2009; Nutley, Walter, & Davies, 2007). Knowledge mobilization is the "reciprocal and complementary flow and uptake of research knowledge between researchers, knowledge brokers and knowledge users—both within and beyond academia—in such a way that may benefit users and create positive impacts" (Social Sciences and Humanities Research Council of Canada, 2018, para. 16). Emerging literature suggests research-practice-partnerships (RPPs) as potentially powerful mechanisms to improve the integration of research evidence in K–12 education systems (Coburn, Penuel, & Geil, 2013). This article uses Cynthia Coburn, William Penuel, and Kimberly Geil's (2013) definition of research-practice partnerships (RPPs) as "long-term, mutualistic collaborations between practitioners and researchers that are intentionally organized to investigate problems of practice and solutions for improving district outcomes" (p. 2). Alongside the growth of RPPs across North America for school improvement has been an interest in how to trace their influence across diverse stakeholders often involving multiple researcher and practitioner organizations (Henrick, Cobb, Penuel, Jackson, & Clark, 2017). However, few studies have sought to evaluate their impact.

In response, the purpose of this article is to 1) provide an overview of approaches to measuring RPPs that are emerging from the literature, 2) to introduce developmental evaluation as an approach to measuring RPPs that engages stakeholders, 3) introduce a learning framework developed to assess four RPPs in North America in an evaluation commissioned by the governmental funder, and 4) present data from four RPPs on: a) types of metrics being utilized, and b) interview data exploring the ways that network leads and policymakers describe network goals, partnerships, and impacts arising from their work. In this study, RPPs each included a network of universities, school districts, policymakers, and community organizations coordinating school improvement efforts around priority areas (such as math, equity, and other focus areas). Since there has been little empirical work evaluating RPPs, this study addresses an important gap and provides baseline data on what type of metrics are already being used by RPPs as well as an approach, a developmental evaluation, to go about this work.

This study is part of a broader multi-phase developmental evaluation (see Figure 1).

Developmental evaluation is a collaborative approach to assessing impact that engages

Figure 1. Multi-phase developmental evaluation of four large-scale RPPs

SCOPING REVIEW	NEEDS ASSESSMENT	SOCIAL NETWORK ANALYSIS	EXEMPLARY CASES	MOBILIZE LEARNING
What is known in the literature? What examples of RPPs exist elsewhere?	What knowledge and perspectives can partners contribute to measuring impact?	What have RPP leads and key stakeholders experienced?	What are some examples of impact in COPs & schools?	How can learning be shared with broader system?
• Scoping review of 80 articles • Jurisdictional scan of 78 RPP examples	• Interviews with key stakeholders including policymakers & RPP leads	• Social network analysis survey to network managers	• 8 case studies (2 per RPP)	• Multi-modal resources made & disseminated to tell RPPs story
EXISTING KNOWLEDGE	**STAKEHOLDER PERSPECTIVES**	**MEASURING NETWORKS**	**SHOWCASING EXCELLENCE**	**SHARING LEARNING**

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end-users as active participants throughout the process with "a chief aim … to support the development of large-scale social innovations through learning-centered, improvement-focused evaluation," Peurach, Glazer, & Lenhoff, 2016, p. 615). Phase one produced a scoping review of 80 articles, and included an environmental scan of 78 RPPs around the world to inform the development of the learning framework for the subsequent phases (introduced at the end of the literature review). The second phase employed a needs assessment with a three-fold purpose: 1) to engage with key stakeholders that want to collaborate to determine what they perceive as priority areas for continued improvement, 2) identify recommendations to improve networks and cross-network learning opportunities, and 3) co-produce/refine an evaluation framework to measure the impact of RPPs across diverse contexts. The third phase planned to use social network analysis to measure network activities and then to feed results back to network leads in order to make decisions about how to further strengthen the network. The fourth phase would have conducted and showcased exemplary cases from RPPs and communities of practice (CoPs). The final phase planned to mobilize learning through products, events, and networks (this also occurred throughout the other phases). Due to a change in government, only Phases one and two were completed, as the evaluation was cancelled.

This article draws on the first two phases using document analysis and interviews to explore two research questions:

1. What metrics are RPPs using to evaluate their impact? And how do these metrics align with current frameworks to assess RPPs and their effectiveness?

2. What do leaders of RPPs see as important dimensions to cultivating impact in school districts?

The findings suggest that while metrics being used provide basic information on the number and types of products produced and the stakeholders involved in partnerships and events, they fail to capture the richness, depth, and diversity of the work of RPPs. Consequently, more robust methods are needed to capture the quality and depth of interactions between partners, and new approaches are needed to maximize the use of data collected in continuous learning cycles. RPP leaders and policymakers conceptualize success in relation to: collaborative processes (shared goals, new and diverse partnerships, improved student achievement, system alignment); systems and structures (joint work, funding and sustainability, demand from practitioners, equity); continuous learning (capacity building, reach, adaptability, storytelling). This article argues that developmental evaluation, especially if paired with robust social network analysis and theory, encourages the adaptive decision-making and continuous learning cycles necessary to optimize the impact of RPPs for the benefit of teachers, students, and communities.

Literature review: What do we know about evaluating RPPs?

First, the literature review presents what is known about measuring RPPs, it then introduces developmental evaluation as a promising approach to explore RPPs. A learning framework developed through the project to assess RPPs in relation to partnership indicators, dimensions of effectiveness, brokering functions, systems

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and structures, collaborative processes, and continuous learning is also presented. The framework was designed by an interdisciplinary research team with input from stakeholders from the RPPs (including policymakers, practitioners, and researchers) to explore four large-scale RPPs in North America.

Defining research-practice partnerships

An anchoring definition emerging for RPPs is the conceptualization offered by Coburnet al. (2013) as "long-term, mutualistic collaborations between practitioners and researchers that are intentionally organized to investigate problems of practice and solutions for improving district outcomes" (p. 2). Coburn et al. (2013) identify five defining characteristics of RPPs. They are long-term, focused on problems of practice, mutualistic (address needs of all partners), intentionally organized, and they produce original analyses. Emerging theoretical work on RPPs has explored the types, dynamics, and outcomes of RPPs (Coburn & Penuel, 2016; Coburn et al., 2013; Penuel, 2017; Tseng, Easton, & Supplee, 2017); explained the mechanisms in RPPs that lead to evidence-based decision-making by practitioners (Wentworth, Mazzeo, & Connolly, 2017); outlined exemplary activities and practices (Pollard, 2008; Ruby, 2015); detailed the necessity, development, and sustainment of RPPs (Kim, Park, Cho, & Kim, 2013; Muñoz, 2016; Quartz, Weinstein, Kaufman, Levine, Mehan, Pollock, Priselac, & Worrell, 2017; Sanders & Epstein, 2000; Turley & Stevens, 2015); developed frameworks for guiding inquiry in RPPs (Kaser & Halbert, 2014); explored how to understand different ways of collaborating in RPPs (Parr & Timperley, 2015); and analyzing how differences can be understood, negotiated, and overcome in RPPs (Penuel, Allen, Coburn, & Farrell, 2015; Penuel, Coburn, & Gallagher, 2013).

A lack of empirical work studying the impact of RPPs

Despite the emerging literature on RPPs, there is a dearth in literature on how to evaluate the collaborative work of RPPs for a variety of factors including the diversity of stakeholders and organizations involved, the variety of activities and priority areas focused on, and methodological challenges in regards to measuring networks (Cooper, Rodway, MacGregor, Shewchuk, & Searle, 2019). As Erin Henrick, Paul Cobb, William R. Penuel, Kara Jackson, and Tiffany Clark (2017) highlight: "funders and RPP members agree that traditional ways of assessing the quality of a research study—such as the number of publications in peer reviewed research journals—do not adequately address critical aspects of RPP work, such as the development of a genuine partnership between researchers and practitioners or the impact of the RPP on the participating practice and research organizations." (p. 1). Caitlin C. Farrell, Kristen L. Davidson, Melia Repko-Erwin, William R. Penuel, Corinne Herlihy, Ashley Seidel Potvin, and Heather C. Hill (2017) conducted a descriptive study of 27 RPPs in the United States using a mixed-method, cross-case design utilizing interviews, surveys (with previously validated items), and grant document analysis to assess the impact of the RPPs. Two surveys were used for researchers and practitioners, with results being compared across the two groups. Major categories explored included goals of the partnership, conducting and using research, activities, communication,

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challenges, perceptions of the partnerships, planned future activities, and funding recommendations. Farrell et al. (2017) found that researchers and practitioners were both positive about their involvement in RPPs, reported significant progress toward their collaborative goals, and suggested these collaborations had increased access to resources and expertise to solve educational challenges. However, she also found that

> these types of partnerships struggle to achieve synchrony, that is, a state in which researchers and practitioners operate at the same time scale so as to coordinate activities effectively. It may be hard for researchers to keep up with the 'speed of practice', and researchers' careful analysis proceeds more slowly than is useful for practitioner. (p.61).

These challenges were echoed throughout the literature included in the scoping review.

Key dimensions to consider for RPPs

Emerging from the 80 articles analyzed for the scoping review (Cooper, Shewchuk, MacGregor, Mainhood, Beach, Shulha, & Klinger, 2018) are three overarching categories for understanding the organization and work of RPPs: systems and structures, collaborative processes, and continuous learning. At the core lies shared goals, co-production, and multi-stakeholder collaboration organized around three dimensions:

1. **Systems and structures:** funding, governance, strategic roles, policy environment, system alignment;

2. **Collaborative processes:** improvement planning and data use, communication, trusting relationships, brokering activities, capacity building;

3. **Continuous learning:** social innovation, implementation, evaluation, and adaptation.

Social network analysis is emerging as a potentially powerful methodology to understand evidence use in education across these dimensions. Much of the empirical work is being spearheaded by a small contingent of scholars in the U.S., the U.K., and Canada (Alan Daly, Kara Finnigan, James Spillane, Cynthia Coburn, Bill Penuel, Elizabeth Farley-Ripple, Chris Brown, and Joelle Rodway, See Cooper, Shewchuk, MacGregor, Mainhood, Beach, Shulha, & Klinger, 2018 for all the studies from these listed authors pertaining to RPPs)

In the end, five lessons emerged for RPPs to be successful: the need to build two-way reciprocal streets of engagement, the need to shift data use from accountability and compliance to network learning, the need to identify specific entry points of change, the need for a focus on capacity-building and leveraging brokers across networks, and the need to use communication as a problem-solving tool to assess and adjust innovations and implementation rather than passive reports of activities.

Evaluation frameworks and metrics to assess RPPs

Three frameworks to assess the collaborative work of RPPs, arising from Cooper et al.'s (2018) scoping review, were used to construct the evaluation framework for this study (Cooper, 2013, Henrick et al, 2017; Kothari et al, 2011). It should be noted

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that although it is empirically derived, validity evidence is still accruing for these three frameworks.

First, Amanda Cooper's (2013) brokering framework proposes eight brokering functions of KMb: 1) linkage and partnerships, 2) awareness, 3) accessibility, 4) policy influence, 5) engagement, 6) organizational development, 7) implementation support, and 8) capacity building. The framework was developed through a cross-case analysis of 44 Canadian research brokering organizations facilitating interaction between practitioners, researchers, and policymakers and, as such, is relevant to exploring the configurations of RPPs due to similar stakeholder composition.

Second, a new empirically derived framework by Henrick et al. (2017) outlines five dimensions of effectiveness for RPPs: 1) building and cultivating partnership relationships, 2) conducting rigorous research to inform action, 3) supporting the partner practice organization in achieving its goals, 4) producing knowledge that can inform educational improvement efforts more broadly, and 5) building the capacity of participating researchers, practitioners, practice organizations, and research organizations to engage in partnership work. Henrick et al.'s (2017) framework was built from a review of the existing literature in conjunction with semi-structured interviews with two to three researchers from different RPPs (research alliances, design-research partnerships, and networked improvement communities). That study (Henrick et al., 2017) asked about RPP goals, and about indicators of these goals, in addition to collecting metrics and documentation and tools that RPPs were using to assess their impact. Each of the five dimensions in the framework also include further indicators. This framework is relevant to the study, as it is the only framework specifically designed to evaluate RPPs.

Third, Anita Kothari, Lynne MacLean, Nancy Edwards, and Allison Hobbs (2011) provide a set of practice-based indicators to measure collaborative knowledge creation and gauge the impact of partnerships between researchers and policymakers. The indicators arose from interviews with 16 health policymakers and researchers involved in eight research-transfer partnerships in Ontario. Although they arose from work specifically with policymakers, they are relevant to other types of partnerships. First Kothari et al. (2011) identified a set of common partnership indicators: communication, collaborative research, and the dissemination of research. Each dimension includes success indicators (e.g., communication is clear, communication is relevant, communication is timely, communication is respectful). Recognizing that partnerships evolve as they mature, Kothari et al. (2011) then identified two further sets of indicators in relation to early partnership indicators (research findings, negotiations, and partnership enhancement) and mature partnership indicators (meeting information needs, a level of rapport, and commitment). Each dimension includes further success indicators and potential sub-indicators as well. This framework makes an important contribution to thinking through how partnerships with policymakers might differ from partnerships with practitioners (such as in the Henrick et al. [2017] model).

None of these frameworks, however, discuss explicitly the methods that might be best to use in order to study these indicators on the frontlines. As such, an overview of developmental evaluation as a promising approach to studying RPPs is provided.

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Developmental evaluation: A promising approach to measuring RPPs

In contrast to more traditional frameworks of evaluation, developmental evaluation (DE) has emerged as a useful option because it can be used at the beginning, or developmental phase, of a new or adapted process, service, or program where the way to achieve the desired outcome is unknown or where the context in which the process, service, or program is delivered is continually changing (Patton, 1994; Preskill & Beer, 2012). DE is a form of program evaluation that examines programmatic or project activities by focusing on context and relationships. With a deep understanding of program context, DE allows for adaptively responding to changing or emerging circumstances.

DE is a reframing of traditional evaluation, which Michael Patton (2010) described as having eight interconnected principles. These principles were developed from his work in the field and with evaluation colleagues.

1. The ***developmental purpose*** frames, focuses, and supports learning about how the program is being developed. The nature of program may be a) the creation or invention of a new program, b) the ongoing adaptive development of a program in a continually changing environment, c) the replication of an existing program in a new context, d) developing a rapid response to sudden crisis or change, or e) enabling systems change.

2. Attention to intended use by its intended users is a focus from beginning to end, facilitating the evaluation process to ensure ***utilization***.

3. ***Systems thinking*** is essential for conceptualizing, designing, and drawing conclusions.

4. There is recognition that evaluation is taking place in a ***complex system***. As such, the plans, goals, and targets of the evaluation may need to evolve as findings emerge and the perspectives of stakeholders change.

5. The evaluation ***rigorously*** supports learning about what the program could/should look like by asking stakeholders probing questions about what works for whom and in what circumstances. It is an emergent and adaptive design that customizes and contextualizes methods, and data collection techniques fit the complexities of the situation and are credible, responsive, appropriate, and reflect the questions of the stakeholders. Data collection techniques may include interviews, surveys, and focus groups.

6. Developmental evaluators embrace ***co-creation*** with key stakeholders to conceptualize, design, and carry out the evaluation. All suggested adaptations to the program are informed by feedback from the system (e.g., stakeholders, end-users) it is trying to change.

7. There is ***timely feedback*** to inform ongoing adaption as needs, findings, and insights emerge, rather than only at predetermined

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times. Feedback includes reflection-in-action, the intentional recording and documenting of what is being learned as projects are implemented.

8. The focus is not on results but on continuous learning to understand a) the evolving context of the initiative, b) making informed decisions, and c) taking action when needed to improve the ***innovation process***.

To be successful, DE requires organizational leadership with a relatively high level of risk tolerance, flexibility, and the ability to cope with ambiguity. Ideally, there is a genuine interest in and commitment to using evaluation findings to make necessary changes to develop the initiative. In addition, the organizational culture will have a developed support network for innovation and continuous learning with sufficient resources (e.g., time, people, and money) for ongoing inquiry. Finally, as the ultimate goal of DE is learning, organizational leaders need to be committed to ensuring that evaluation findings are accessible to internal and external stakeholders (Preskill & Beer, 2012).
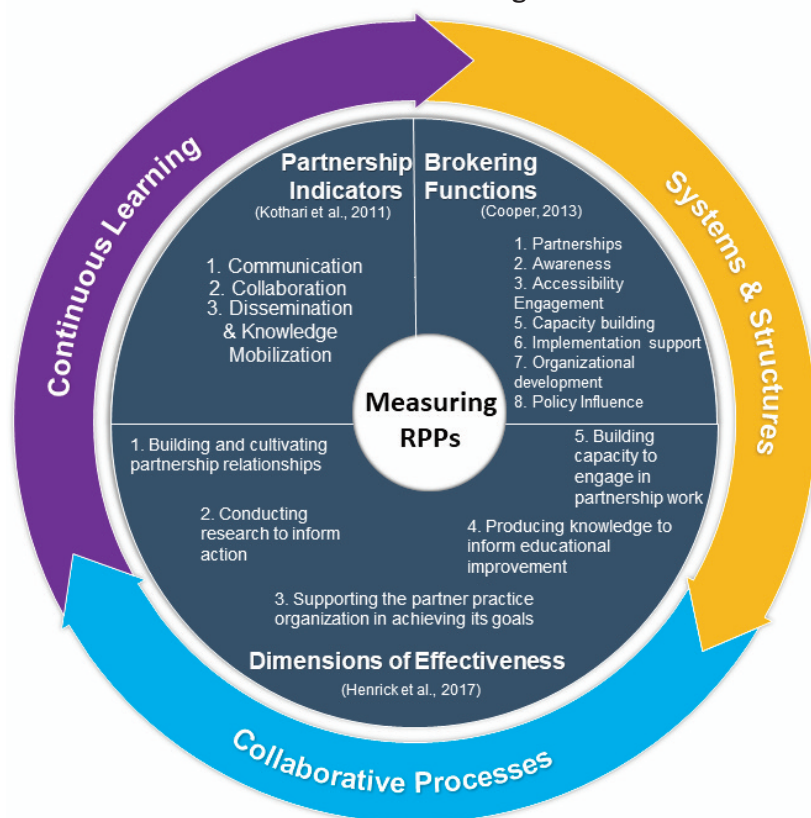
A learning framework for RPPs

The learning framework described here blends the emerging work from the field (see Figure 2). The centre of the framework incorporates the metrics and categories from Henrick et a. (2017), Kothari et al. (2011), and Cooper (2013), with the outer ring showing structures and systems, collaborative processes, and cycles of continuous learning. This study compared the metrics being used by the four RPPs to each of the frameworks, before conducting interviews with policymakers and RPP leads to explore their perspectives on systems and structures, collaborative processes, and continuous learning. This is called a learning framework, rather than an evaluation framework, to underscore the purpose of developmental evaluation.

Figure 2. A learning framework to explore RPPs: Dimensions of effectiveness, partnership indicators (early and mature), brokering functions, systems and structures, collaborative processes, and continuous learning

Methodology

Sample selection

Purposeful sampling is widely used for qualitative research (Palinkas, Horwitz, Green, Wisdom, Duan, & Hoagwood, 2016) to select information-rich cases to study (Patton, 2002). The current study examines a jurisdiction in North America that has spearheaded an initia-

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tive to build evidence networks for education systems along priority areas. The initiative emerged over multiple phases. The network development phase, however, began in 2015 and all four networks are still active in 2020. Each of the four interrelated RPPs were selected from the same K–12 education system, with a population between 12 and 15 million people with approximately 125,000 teachers serving over two million students. Each RPP is cultivating partnerships across four types of organizations: research organizations (universities), practice organizations (school districts), policy organizations (ministries/state education agencies), and community organizations. A brief description of each RPP is provided below (see Table 1).

Table 1: Characteristics of RPPs included in the study

	RPP 1: Sycamore Network	RPP 2: Birch Network	RPP 3: Spruce Network	RPP 4: Willow Network
Funding	Governmental funding	Governmental funding	Governmental funding	Governmental funding
Governance	University leads (3 researchers from same institution) • network manager	University leads (3 researchers from 3 different universities) • governed by executive committee and advisory panel	School district lead	University leads (2 researchers from 2 institutions) • network manager at each university
Partners	16 universities 18 school boards 10 community organizations 2 policy partners*	15 universities 16 school boards 21 community organizations 1 policy partner*	5 partnership organizations spanning both university/ practitioner organizations	coordinating role across the other three networks managing cross-network learning, amplifying resource distribution, and providing capacity-building opportunities
Priority Areas	6 priority areas	4 priority areas	4 pillars	N/A
Organization	Geographic regions	Priority area	Cross-sector collaboration (health/education)	Liaison between policymakers and RPPs

*Policy partners include state education agencies and/or governmental ministries

Researchers relationship to the RPPs

The principal investigator and research team were commissioned by the governmental funder to evaluate the RPPs included in this study.

Data collection and analysis

Network impact metrics

Document analysis ($N = 18$) of annual reports and related materials (e.g., implementation plans) of the four RPPs from the 2016–2017 and 2017–2018 school years was conducted. To ensure reliability and a systematic process to analyzing metrics from each RPP, a coding manual defining the indicators for each of the three analytic frameworks—Cooper (2013), Kothari et al. (2011), and Henrick et al. (2013)—was created. Jessica DeCuir-Gunby, Patricia Marshall, & Allison McCulloch (2011) high-

light that codes emerge from three major areas: "Codes can be developed a priori from existing theory or concepts (theory-driven); they can emerge from the raw data (data-driven); or they can grow from a specific project's research goals and questions (structural)" (pp. 137–138). The coding manual was theory-driven (using metrics arising from the literature review and structural in relation to the research goals). Kathleen MacQueen, Eleanor McLellan-Lemal, Kelly Bartholow, & Bobby Milstein (2008) suggest six potential elements for each code: 1) a code name/label, 2) a brief definition, 3) a full definition, 4) inclusion criteria, 5) exclusion criteria, and 6) examples. This codebook included three of these elements—a code, a brief definition, and examples—as well as a purpose statement outlining the rationale for using each of the three analytic frameworks. For instance, by using Kothari et al.'s (2011) framework, the proportion of metrics that related to early versus mature partnership metrics in use across the four RPPs was assessed. Two rounds of analysis occurred. Initially 138 metrics were extracted from the RPP reports and implementation plans. After these were coded in NVivo and entered into an excel spreadsheet, the study team met to confirm their relevance; this resulted in 13 metrics being excluded. After this second round of analysis, 123 metrics were included for further analysis using the Cooper (2013), Kothari et al. (2011), and Henrick et al. (2017) analytic frameworks (see Appendix A for a full list of the indicators).

Interviews

Purposeful sampling was used for interviews to explore the perspectives of the leaders of the RPPs involved in planning, decision-making, and implementation. These individuals were considered as key informants who were especially knowledgeable about the phenomenon of interest (Cresswell & Plano Clark, 2011). The goal of the interview process was saturation: interviewing participants until no new information was obtained (Miles & Huberman, 1994). Each RPP included multiple leads that straddled research and practice organizations and formed the foundation for partnerships along priority areas identified by the policymakers of the jurisdiction. Recruitment invitations were distributed via email. Appendix B includes the interview protocol. Fourteen one-hour, semi-structured interviews were conducted with network leads (*N* = 11) and policymakers (*N* = 3). Policymakers were included as this initiative focused on collaboration across four areas: research, policy, practice, and communities. Each interview was recorded and transcribed verbatim prior to being uploaded into NVivo. Interviews were coded to ascertain similarities and differences among the RPP leads and policymakers. Deductive and emergent coding techniques were utilized, including identifying major categories of systems and structures (which systems and structures were needed to cultivate impact?), collaborative processes (what impact were collaborative processes having and where could they be improved?), and continuous learning (how was capacity building and adaptation addressed within each RPP?).

Findings

Diverse metrics were being used to measure the work of RPPs

A document analysis was conducted of data reported across two school years in 18

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annual reports and implementation plans to extract impact metrics and assess commonalities and differences among the networks. In total the four RPPs were found to be using 123 metrics (see Figure 3): Willow Network ($N = 40$); Birch Network ($N = 43$); Sycamore Network ($N = 29$); Spruce Network ($N = 13$).

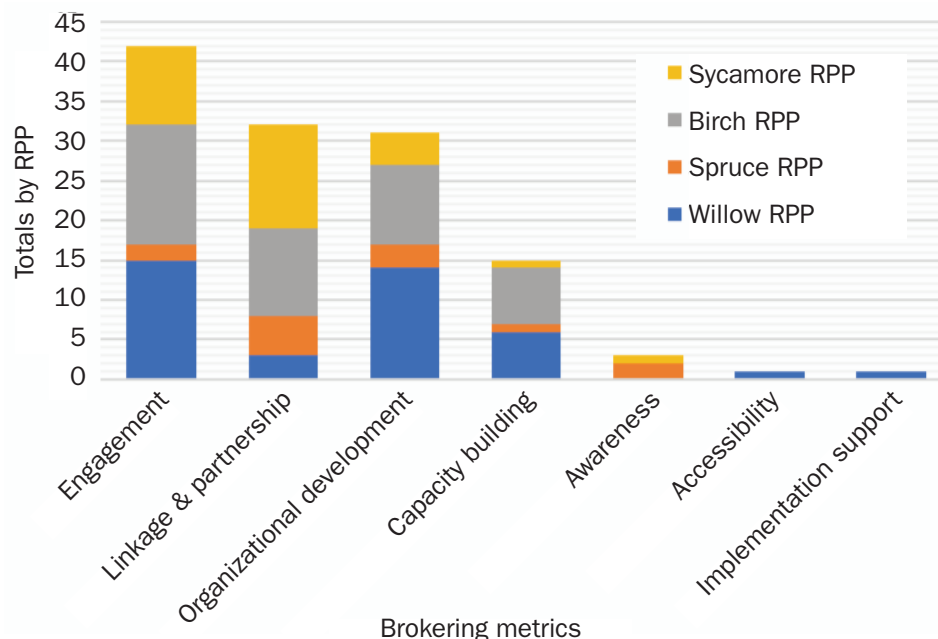**Figure 3. Word cloud of 123 metrics in use by RPPs**

Predominantly, metrics related to counts and quantities of events, partnerships, participants, and resources. Very few metrics and reports dealt with the quality of interactions. The metrics being used by the four RPPs were analyzed in relation to the three frameworks arising from the literature review in order to assess which were the most pervasive and which areas were not represented.

Brokering metrics being used by RPPs

RPPs were collecting a range of metrics to assess engagement, partnership growth, as well as reach of their efforts through web analytics and social media (see Figure 4).

Figure 4. RPPs metrics analyzed in relation to brokering functions

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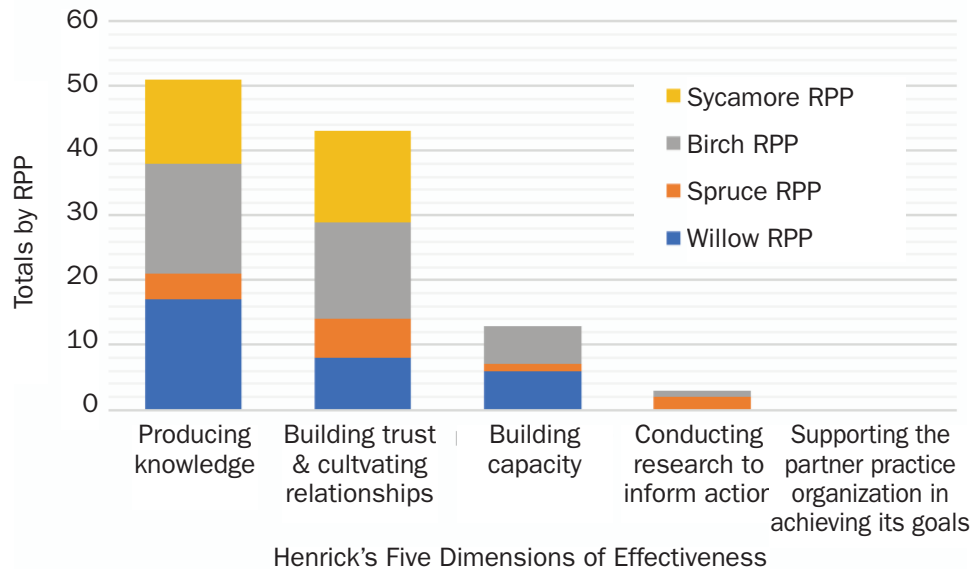Partnerships and
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Metrics utilized in order of prominence included: engagement (33%), linkage and partnership (26%), organizational development, and capacity building (12%). Very few metrics addressed increasing the awareness of a particular evidence base, increasing the accessibility of research, or the implementation support. Not one metric was related to policy or policy impact.

Henrick's five dimensions of effectiveness

The current study also analyzed the metrics being used by the RPPs in relation to Henrick et al.'s (2017) framework (see Figure 5).

Figure 5. Metrics being used by RPPs analyzed in relation to Henrick's framework
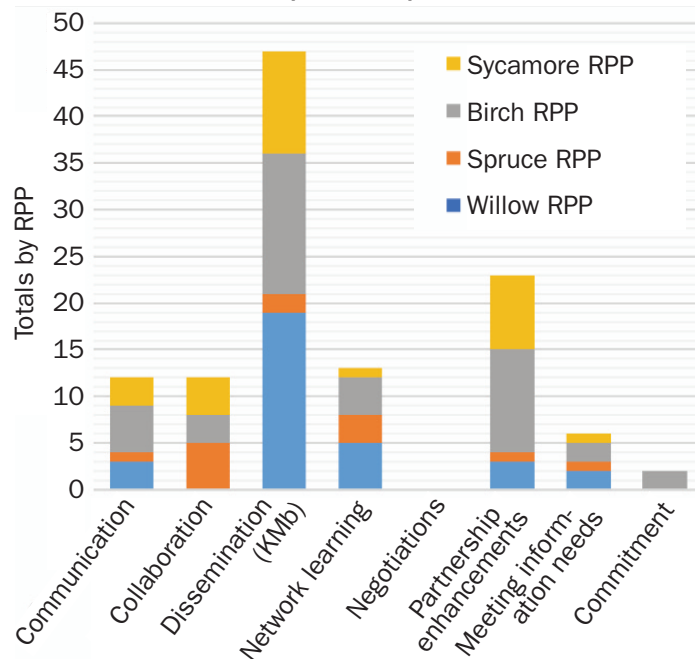
Most of the metrics in use by the four RPPs related to producing knowledge and products (46%), building trusting and cultivating relationships (39%), and building capacity (12%). Only three percent of metrics related to conducting research to inform action, which is not surprising since the focus was not on conducting new empirical research but on disseminating and applying what is already known. No metrics in use related to supporting the practice organization in its goals; however, the goals of the broader networks were co-produced alongside practitioners.

Kothari's framework assessing early and mature partnership indicators

Kothari et al.'s (2011) framework explores three general partnership dimensions—communication, collaboration, and dissemination (this category was expanded to include knowledge mobilization efforts)—as well as early partnership indicators (network learning, negotiations, partnership enhancement) and mature partnership indicators (meeting information needs, commitment, and level of

Figure 6. Metrics being used by RPPs analyzed in relation to Kothari's partnership dimensions

rapport). The metrics from the four RPPs were analyzed in relation to Kothari et al.'s (2011) dimensions (see Figure 6).

Just under half of the metrics being used by RPPs (41%) traced dissemination and knowledge mobilization efforts with stakeholders. The next most prominent category was partnership enhancement (20%), an early indicator, followed by network learning (11%), collaboration (10%), and communication (11%). The mature indicators of meeting information needs (5%), commitment (2%), and rapport (0%) were less represented across the sample.

Comparing indicators across the four RPPs

An analysis was conducted to categorize and compare common metrics across all four RPPs (see Table 2).

Table 2. Common metric categories

Metric	Count	Sycamore	Birch	Spruce	Willow
Number, type, and quality of tools and resources	19	√	√	√	√
Number and type of participation by different groups during events	13	√	√		√
Number and type of representation/ participation by relevant partners	12	√	√	√	√
Creation of planning documents	8	√	√	√	√
Number and type of events	7	√	√		√
Social media analytics	6	√	√		√
Website analytics	6	√	√		√
Creation and upkeep of website	6	√			√
Number and type of meetings with key partners	5	√	√		
Pre- & post-workshop indicators to compare knowledge and skills before and after event	4		√		√
Technology purchased to allow for daily operation	4				√
Produce (by both research partners and external research) high-quality and relevant evidence on focal problem	3	√		√	
Social media analytics used in planning and reports	3				√
Communications sent to network partners	2				√
Participating partners/organizations provide capacity-building opportunities to team members	2		√		√
Partners have a shared understanding of problems/strategies/activities being undertaken	2			√	
Partners routinely work together/collaborate	2		√	√	
Subtotal: Common metrics	104				
Unique metrics	19	3	6	2	8
Total	**123**				

While the metrics were not exact, there were many similar types of metrics in use (see Appendix A for all metrics from the four RPPs in relation to these categories). Unique metrics also existed (see Table 3).
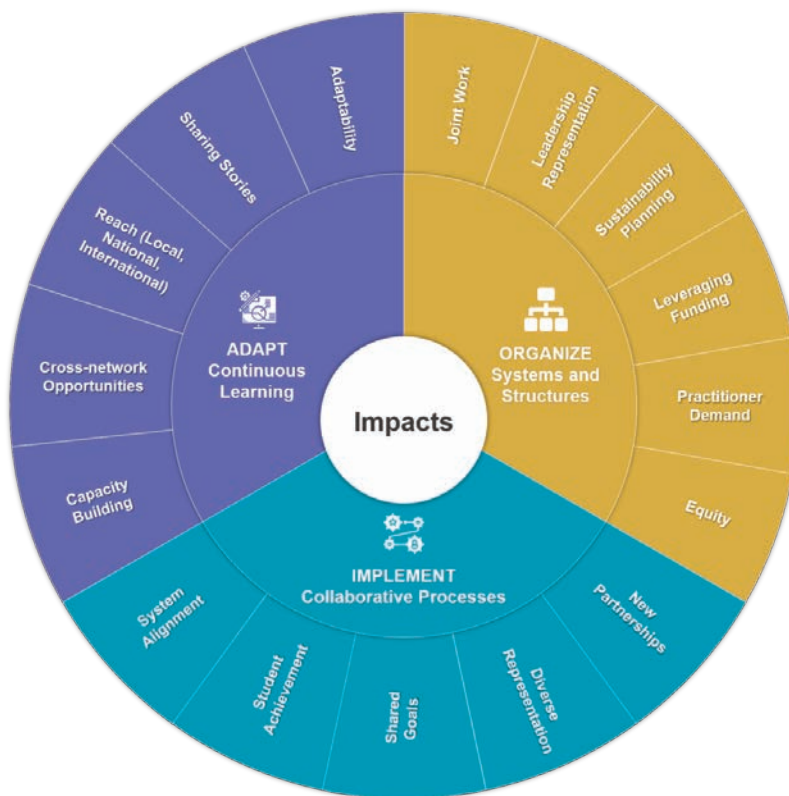
Table 3. Unique metrics in use by networks

Metric	Network
Number, type, and quality of partner networks and equity activities	Sycamore
Variety of venues to researchers, practitioners, policymakers, teachers, parents, and community groups	Sycamore
Evaluation structure	Sycamore
Number of extended projects	Birch
Number of potential leveraging grants	Birch
Personnel hired	Birch
Level, type, and quality of evaluation activities	Birch
Data analytics from practitioner resource website	Birch
Formed communities of practice (CoPs)	Birch
Summaries of CoPs' current work	Spruce
Make arrangements for engagement meeting	Spruce
New skills are incorporated into networks	Willow
Communications sent to the public	Willow
Incentives and paid leave provided for participants	Willow
Network has made use of a select number of social media platforms to engage priority audiences, promoting network achievements/resources/events	Willow
Properly obtained graphics obtained to support resources and tools	Willow
Use of a select number of social media platforms to engage priority audiences, promote network resources and events	Willow
Day-to-day usage of office supplies	Willow
Documents and supporting resources were printed and utilized	Willow

Some of the unique metrics do focus on the quality of interactions as well as the sustainability of funding and extension of projects beyond initial RPPs. One metric also explores how "new skills" are integrated into networks; however, no mention was made on how this would be evaluated or reported on. There were also a few metrics that related to the evaluation structure, as well as the level, type, and quality of evaluation activities.

Interviews

This study organizes how network leaders and policymakers conceptualized and understood impact in relation to the outer circle of the evaluation framework: systems and structures, collaborative processes, and continuous learning (see Figure 7).

Figure 7. Key factors and impacts emerging from interviews in relation to systems and structures, collaborative processes, and continuous learning

The following sections will go over interview data for each of these dimensions and impacts.

Collaborative processes: Shared goals and mutualism as impact

Collaborative processes are central to the success and impact of a network and include communication, trusting relationships, brokering activities, among other dimensions. Participants spoke about a range of impacts, including new partnerships, partnerships involving diverse stakeholders (especially those including groups that historically have been excluded), and shared goals that were arising from the initiatives in their jurisdiction.

New and diverse partnerships as impact

The most important factor to galvanizing impact in school districts, according to network leads and policymakers, was establishing multi-stakeholder partnerships that spanned four areas: research, practice, policy, and community end-users. Establishing collaborative networks was seen as a precursor to galvanizing large-scale change in K–12 school systems. As one participant highlights: "In order for us to really create impact or change in the sector, the three communities need to work closely together—the policy and program community, the researchers, and the practitioners." Historically, since these groups had not traditionally worked together, this development in and of itself was seen as a major impact of RPPs.

Participants recognized that traditionally research, government, and schools have been siloed. RPPs primary goal was to change those traditional structures. A policymaker articulated: "The goal … is multi-partners, so in terms of those working in

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the research space, practice space, and the policy space knowing full well that those three can be interchanged within the roles, but typically, policy space gets defined under the [government]; practice space under school districts and research space under the academy. Our goal … really is going forward that that space is more fluid as a natural way to move forward. The idea that we all need and have different expertise. Can we capitalize on each other's expertise? What are the best practices that are occurring in the field and supporting teachers, supporting students?"

Improved student achievement as impact

At the centre of this recognized need for collaboration was the shared goal of improving the use of research evidence to increase student achievement. As one participant noted, "The heart and soul of [our RPPs is] really to try to strengthen, build, improve, develop knowledge mobilization capacity across the education sector with very different and diverse education stakeholders but with the ultimate intent of using evidence more strongly in teaching and learning and improving classroom experiences for students and, ultimately, student achievement."

System alignment as impact

Across different schools and districts, participants highlighted that while they faced similar challenges, they were siloed and often recreating the wheel. A network approach to school improvement was seen as an opportunity to reduce duplication, aggregate efforts, and spread best practices at scale. As one network lead described, "The main goals has been to take all the pockets of good work and research that are happening across the province and bring them together in the various networks and then more specifically to subject areas through the CoPs. You know, so that, one, we are bringing together, you know, all of the knowledge and not everyone working in their own silos and not duplicating work, and then, two, so that we can try and work on spreading the good work to other parts of the province."

Systems and structures
Joint work as impact

Opportunities for joint work were divided into three categories: working within RPPs networks, working across RPPs networks, and working with organizations external to the initiative to develop new funding streams. Networks utilized similar approaches to engaging in joint work with diverse stakeholder groups. Each network develops and supports the vision, mission, and strategic plan of the network through an executive leadership team. Members from these committees include representatives from associations, organizations, or institutions who actively contribute resources to meeting the strategic plan of the networks. Many participants also discussed the importance of building on events already happening in order to not overburden the system and key stakeholders. One stakeholder explained how they organized their most recent executive meeting:

> They [network partner] managed to rent the facility for an extra day
> where they were having their conference, a number of people that
> would have been attending that meeting were there anyway … So

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> it just simplified things and we spent a full day with a facilitator
> doing strategic planning.

Advisory panel representatives include school boards, universities, professional organizations, and leaders from communities of practice (CoPs). As one participant articulated, the purpose of these meetings to is "provide updates to each other on what our groups are doing" and to discuss "what they intend to do over the next six months to a year." Representatives from CoPs also meet with executive committees as part of advisory panels or separately to promote the cross pollination of ideas:

> Some of the CoPs didn't really know what to do and then other
> CoPs had a better idea, so we'd kind of be like, well this is what
> they're doing as an example, and like you can connect and talk to
> each other. So we do have CoP lead meetings where we bring to-
> gether the different CoP leads and our executive.

Key informants from networks explained that it was essential for individuals who sat on executive or advisory panels to have decision-making capabilities within their own organizations in order to reduce structural barriers in reaching front-line staff (e.g., school board representatives should have the ability to allow teachers to be released to attend workshops hosted by the network).

Sustainability as impact

While network leads articulated a range of impacts, they also highlighted challenges around funding and saw sustainability as a major concern for partners. The theme of sustainability emerged consistently across all participants. For example, two participants said:

> I think success would be to see sustainability in the work being
> done so that it can carry on, with or without us, in the future. There
> has been a lot of hard work and energy that has gone into the de-
> velopment of these networks, so having their work be sustainable
> would be a real success.

> Is [there] a way to create or find sustainability in this type of ap-
> proach so that you have different partners seeing the benefit of it,
> the value of it, who are willing to contribute to this kind of work?
> Whether it's school boards, universities, organizations, we see the
> benefit of it for students, teachers, and parents across the province
> and want to continue this type of work, this type of network ap-
> proach.

Some networks reported they are working with partner organizations to secure outside sources of funding. In addition, one network representative highlighted they often leveraged funding from research studies that are aligned with network goals. These quotes show that networks are working to leverage external sources of funding to support network goals, though participants were unclear as to whether this external funding would be sufficient to cover all network needs.

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Demand from practitioners as impact

Key informants from the thematic networks reported sharing knowledge is not only about communicating the stories of the RPPs, it is also about getting diverse stakeholder groups to work together and inspiring action. Key informants highlighted networking, and in-person events provided the most promising opportunities for knowledge sharing. One stakeholder highlighted that connecting with and obtaining "buy-in" from individuals during the beginning phases of the network development was the "biggest challenge … how do we make people realize that that's what we're really here for, and the advantage of it?" Representatives from the network reported that they were able to increase "buy-in" from practitioners by "addressing needs that teachers have," as one participant put it. In addition, a representative from the same network noted that it was important to show practitioners they were not "going to try and change everything because schools, school systems, and teachers do a really good job in a lot of areas" and that the network was "going in with the mindset of we want to learn along with you." Educators, schools, and school districts have responded positively to this approach, and new connections are being made: "so we have school districts contacting us and saying, can we come and see?" Many network leaders discussed the success of RPP impact in terms of growth: "I think success can be monitored in terms of reaching goals and seeing growth in the network. And in the last two years that I've been with [the RPPs] the growth has been astronomical." A stakeholder from another network noted that connecting with provincial professional organizations created opportunities for the network to engage with teachers: "I connected them up with the teachers' union … to get some teachers to participate in focus groups and in co-creation and materials … as part of this new project." In addition, network representatives reported offering workshops on content that is relevant to practitioners, creating brief and jargon-free written resources targeted toward specific audiences, developing informative videos, and using online knowledge sharing strategies such as websites and social media.

Equity as impact

Expanding RPP's approaches to KMb to improve visibility does not mean current efforts have been unsuccessful. One network member noted:

> Not only have we been successful as a team to be open and transparent, and constantly critical of our own biases and assumptions, we've succeeded at creating spaces where stakeholders in equity can be included … [to] disrupt the larger narrative and learn together.

RPPs appear to be visible within their partner groups, and by expanding current KMb efforts, network members felt this visibility could be improved. Key informants were mindful, however, that gauging improved partner awareness of the initiative will need to appreciate the time-lag nature of impact.

Continuous learning
Capacity-building as impact

RPPs were leading their own capacity-building efforts within each network tailored specifically for their priority topic areas and stakeholders. When asked to identify

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areas where further learning could occur, network participants listed three areas where capacity building was still needed: 1) networks (growth, spread, benefits, and the drawbacks of breadth versus depth), 2) knowledge mobilization (best practices, current evidence on what works, how to measure these efforts), and 3) implementation (support for work on the frontlines with teachers and students in classrooms).

Participants highlighted that the initiative had created opportunities for the four RPPs to meet to discuss and learn from the wider initiative, and these events were predominantly considered positive by participants. Network members noted that more cross-network meetings need to occur to further develop network capacity and trust. Network participants also highlighted that an opportunity to improve these learning opportunities was to involve network leads and CoP leads prior to the event—in the initial planning stages—to co-produce priorities and activities that would better address the needs of what was happening on the frontlines. For example, a network representative noted, "every meeting that we have or we've been brought together has been really rushed." Stakeholders from across the networks also highlighted that while there have been opportunities to report on network activities at cross-network events, there has not been enough intentionality around professional development and building connections to allow networks to work together as a cohesive unit to share and learn with each other. One network member stated, "It was show and tell. It was sharing. There wasn't any professional learning for us about knowledge mobilization which is what I'd expect." Providing intentional opportunities to build stakeholder capacity and build trust will serve to further strengthen the RPP initiatives. Future cross-network learning opportunities should go beyond reporting on network activities and allow for network members to learn promising practices from each other.

Reach as impact

Network leads talked about how RPPs had successfully brought together education stakeholders at a variety of levels:

> Jurisdictional: "It's learning about the innovation that's happening across the [jurisdiction], I think that's what I see that's really sparking people in this [initiative]."

> Nationally: "We've received high interest and engagement in the initiatives of [the network] throughout [the country]. I have received emails from people in other [jurisdictions] … all expressing interest in getting involved or learning from what we're doing."

> Internationally: "The partners, especially the university partners, have reached well beyond [North America]. So, projects that I have include Brazil, Australia, the U.S., the U.K., and from across Canada."

Many RPPs were building partnerships and disseminating the learning from their work beyond their local context, often to national and international networks of scholars and practitioners working on similar priority areas.

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Sharing stories as impact

All network leads thought sharing stories was critical to both growing the networks and to articulate impacts. As one participant noted:

> So bringing that spotlight and sharing those stories is a way in and of itself that can benefit the network because as you're building those connections, there's more than one to be involved [in] or there are more people who might want to have thoughts on other approaches for [the networks].

While many shared exemplary cases of what worked within a school, there were also network leads who saw the benefits of exploring what did not work. One network lead said:

> What's the priority here? The major question we focused on was not only why do you do this work, but what barriers do you see? What challenges exist? What are we struggling with? What are we not being successful at? I think we struggle with that, as academics specifically [and], more than anything, researchers. I think we struggle with admitting our failures.

Sharing exemplary cases is common, less common is the ability to explore failure as a learning mechanism.

Adaptability as impact

The network leads brought up two factors that contributed to continuous learning: the need to be able to discuss failure and what does not work critically, openly, and honestly, and to be nimble and able to pivot when implementation in schools is not working. One lead recounted that:

> My priority is how does this become a living, breathing thing that's fluid and that's constantly being evaluated, criticized, and bettered, and that we can openly discuss what challenges we're facing with each other, outside, so on and so forth.

This was echoed across leads. While sharing exemplary cases was seen as a strength, they talked about the need for venues to crowdsource solutions to common challenges and to be able to learn from initiatives or pockets of work that were not working in schools to try to identify the differences between the successful efforts and those that were falling flat with end users.

Discussion

The discussion is organized in relation to the learning framework used in the study beginning with the strengths and weaknesses of: metrics in use, systems and structures, collaborative processes, and continuous learning.

The development of higher quality and more robust metrics needed to capture the richness and diversity of RPPs

The need to develop frameworks and specific indicators for RPPs is a consistent call from the field (Cooper, Shewchuk, MacGregor, Mainhood, Beach, Shulha, & Klinger,

2018; Farrell et al., 2017; Henrick et al., 2017; Penuel et al., 2015; Tseng et al., 2017). In fact, other than the learning framework, the only framework and set of indicators designed specifically for RPPs is that of Henrick et al. (2017), although Farrell et al. (2017) also conducted an evaluation of RPPs in the U.S. While metrics have not been applied to RPPs extensively, there is work across other sectors to suggest metrics for capturing impacts related to research use and its influence in complex systems are underdeveloped (Wilsdon, Allen, Belfiore, Campbell, Curry, Hill, Jones, Kain, Kerridge, Thelwall, Tinkler, Viney, Wouters, Hill, & Johnson, 2015). In fact, Wilsdon and colleagues (2015) highlight the real danger in using metrics that are clearly underdeveloped in high-stakes accountability structures where funding might be dependent on impact and therefore stripped for not adequately describing high impact. The metric analysis presented in this article, including an exploration of the 123 (Table 2) metrics in use for four large-scale RPPs still make a valuable contribution to the field, even if the metrics themselves are in their infancy, due to the fact that very little is known about how RPPs are measuring their work across diverse partnerships and contexts. These metrics provide a starting point for a deeper discussion on the quality and whether or not they can capture the work happening across diverse partnerships.

Systems and structures

RPPs were having impact and increasing diverse partnerships across the jurisdiction. Similarly to Farrell et al.'s (2017) findings, participants spoke positively about their experiences being involved in RPPs. Not only were networks inundated with requests from school boards to participate, some of the networks could not meet the demand for the work in classrooms and schools. This demonstrates the impact of the RPPs and also a desire for these types of initiatives within school districts to further support teachers with evidence-based strategies. While policymakers were considered partners in the RPPs from this jurisdiction, metrics and narrative accounts of how to assess and measure those contributions were not shown in the data; in fact, not one metric addressed policy influence or considerations. This is an area where more work is needed and would be fruitful as much of the priorities in schools are set within a broader policy context that should not be ignored. Since few initiatives even include policymakers as partners, it is not surprising that more work is needed to establish best practices and strategies to optimize those interactions. Power was cited, not as a barrier but as something that must be carefully considered due to policymakers often being characterized as funders. This is consistent with other empirical work in this area (Penuel et al., 2015; Turley & Stevens, 2015). In this study, RPPs were acutely aware that funding decisions for their networks reside within the government and, as such, the dynamics around interactions and co-production have implications for this kind of work.

Collaborative processes

Collaborative processes were different depending on the composition of the participating organizations, but all four RPPs discussed needing more time and resources to do substantive work. Resources were also discussed in relation to scaling up and

meeting the needs of more schools across large school districts. Sustainability and further funding were also considerations of RPPs. While school districts were highly engaged with many of the networks, the priority area affected access in some cases (math was an area schools wanted help in, but schools were hesitant to engage in equity issues). Across the sample, community organizations were not represented as heavily as practitioners; however, this data looked at the leadership level, so perhaps drilling down to the communities of practices would show different results. The speed of practitioners' needs, versus the time it takes to do research, still represents a complex challenge—even when using developmental evaluation. Networks often wanted data on issues faster than the research team could produce it. Farrell et al. (2017) highlight this issue of synchrony as an area that needs more work for RPPs to continue to improve on the positive work happening across the education sector.
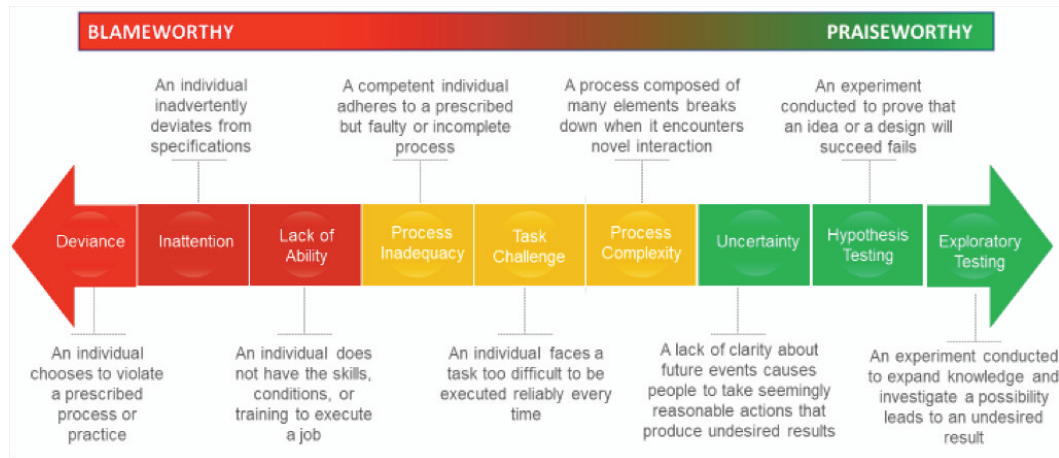
Continuous learning

Developmental evaluation is a promising approach and it has the potential to support and influence dynamic cycles of continuous learning. It encourages adaptive decision-making (Patton, 2010; Peurach, Glazer, & Lenhoff, 2016). Programs such as knowledge networks have multiple stakeholders whose participation is fluid as people come and go, work together, and disconnect and reconnect with other. Each of these stakeholders and their interactions can influence the way the program is conceptualized, shaped, and operationalized. Moreover, mapping cause-and-effect relationships is difficult and often unmanageable. Small actions or minor decisions, even those out of the control of key stakeholders, can have a significant impact on program processes and outcomes. Under these conditions the program decision-making must be adaptive. DE encourages sensitivity to how individuals who connected to a program choose to participate and why they wish to influence or control decision-making. Using social network analysis, and feeding that data back into the system to make decisions about network planning and resources, is a fertile methodology that needs further attention (although scholars are employing social network analysis to explore evidence use, see Coburn, Mata, & Choi, 2013; Daly, Moolenaar, Bolivar, & Burke, 2010; Farley-Ripple & Buttram, 2014; Penuel et al., 2015).

Looking at cases of failure can be instructive

While initiatives often focus on exemplary cases, two participants in this sample highlighted the need to look at cases of what was not working. And while these perspectives were not representative across the sample, those ideas are interrogated here. Many of the networks highlighted exemplary cases of reach and impact while, to a lesser extent, mentioning some of the things that were not working (for instance, gaining access to schools when addressing topics of equity, such as racism, was more difficult than gaining access to work on math instruction). While exemplary cases should be celebrated—especially due to the scale and complexity of the partnerships studied in this jurisdiction—other network leads put forth that having critical discussions and being open to change based on those discussions was an important mechanism of network development. The business sector has a body of research that focuses on learning from failure (Edmonston, 2011). Amy Edmonston (2011)

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argues that many failures (depending on why the failure occurred) are actually praise-worthy, as they show innovative approaches to working together and trying to solve complex problems. Her continuum of failure shows diverse reasons for failure that move from blameworthy to praiseworthy (see Figure 8).

Figure 8. Adapted from Edmonston (2011): A spectrum of reasons for failure

In order to understand more clearly the impacts and influence of RPPs, further research should consider cross-case comparisons of exemplary cases and failed cases to see what can be learned from similarities and differences that might emerge from those two samples.

Conclusion

RPPs represent significant investments by governments to achieve educational improvement. RPPs are resource intensive to build and sustain. However, it is through these sustained efforts that deep, trusting relationships necessary to galvanize large-scale change and system alignment can be fostered. This study showed four networks deeply engaged in this work for the benefit of students and communities. Networks talked about the fact that measuring impact was essential to informing their work and deciding how to target resources. Despite the challenges of the networked design, key informants were adamant that this initiative had enabled opportunities and outcomes for educational improvement that would otherwise have been unachievable. The structure of RPPs has enabled network members to move from disparate pockets of success to large-scale coordinated efforts at school improvement. It was clear to key informants that RPPs had been successful in connecting diverse education stakeholders. More work is needed to continue to assess how best to measure and articulate impact across diverse networks spanning not only many different stakeholders but also a range of different school districts and community organizations.

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Appendix A: Metrics in use by four RPPs in North America, organized by common categories

Common metric: Number, type, and quality of tools and resources

Count	Network	Metric
1	Number and quality of tools and resources	Sycamore
2	Number, type, and quality of student- and parent-led resources developed	Sycamore
3	Number, type, and quality of summaries uploaded onto digital hub	Birch
4	Number, types, and quality of videos created	Sycamore
5	Four or more briefs developed	Spruce
6	Lesson plans/supporting resources	Birch
7	Materials to distribute at events, conferences, networking sessions	Willow
8	Number of artefacts posted	Birch
9	One article per CoP for each of the target audiences (practitioners, scholarly community)	Birch
10	One case study/CoP	Birch
11	One plain-language summary per CoP	Birch
12	One research mini per CoP	Birch
13	One research syntheses from each of the four CoPs	Birch
14	One story-based research mini	Birch
15	Resources, web content, communications and other content are translated into French as needed	Willow
16	Increased amount of French content has been created and disseminated	Willow
17	Tools and resources are produced and literature reviews conducted	Willow
18	Up to one research song	Birch
19	Inventory of current knowledge products	Spruce

Common metric: Number and type of participation by different groups by during events

Count	Metric	Network
20	Number and type of participation by different groups (teacher candidates, teachers, administrators, parents, students, community members) in Lead Associate Teacher Days	Sycamore
21	Number of participants from different groups participating in events	Sycamore
22	All members of the secretariat attended workshop	Willow
23	Number of administrator participants	Birch
24	Number of first-time teacher participants	Birch
25	Number of math teacher-led participants	Birch

Count	Metric	Network
26	Number of participants outside of the CoP	Birch
27	Number of partner participants	Birch
28	Number of teacher participants	Birch
29	Number of teacher participants who have participated in other provincial initiatives beyond CoPs	Birch
30	Number of university member participants	Birch
31	Secretariat members attended conference	Willow
32	Quality of interaction among participants	Sycamore

**Common metric: Number and type of representation &
participation by relevant partners**

Count	Metric	Network
33	Number of and type of CoP leads and co-leads established	Sycamore
34	Number of members of steering committee	Sycamore
35	Each CoP to have established at least one educator reference group	Spruce
36	Each CoP to include educator involvement as an activity in their work plan	Spruce
37	Level of participation by different groups	Sycamore
38	Level of representation across Ontario	Sycamore
39	Level of representation across relevant partners	Sycamore
40	Number of leads	Birch
41	One meeting with representation from each CoP annually, organized by the network	Birch
42	Representation from all CoPs	Birch
43	Participated in meetings (other than home institution)	Willow
44	Participated conferences (other than home institution)	Willow

Common metric: Creation of planning documents

Count	Metric	Network
45	Approved budgets	Birch
46	Co-developed budget	Spruce
47	Approved KMb plan	Birch
48	Well-articulated knowledge mobilization plan	Sycamore
49	Network progress reports	Willow
50	Plan forward and a plan forward for meetings of the CoPs	Birch
51	Project steering committee develops work plan to guide remaining three years of project	Spruce
52	Twelve-month social media & communication plan exists	Willow

Common metric: Number and type of events

Count	Metric	Network
53	Number and types of events that bring educators, teacher candidates, researchers, and community together	Sycamore
54	Number and type of CoP themes addressed in events	Sycamore
55	Number of scheduled events for each year	Sycamore
56	Number, type, and quality of Lead Associate Teacher Days	Sycamore
57	A space was provided to facilitate the workshop sessions in	Willow
58	One conference per CoP per year	Birch
59	Overall number registered to attend	Birch

Common metric: Social media analytics

Count	Metric	Network
60	Number of social media activities	Sycamore
61	Analytics have been collected and conveyed in regular reports	Willow
62	Level and type of mobile app usage	Sycamore
63	Level and type of Twitter activity	Sycamore
64	Take-up and spread of social media across province	Sycamore
65	Twitter analytics	Birch

Common metric: Website analytics

Count	Metric	Network
66	Number of views of videos on digital hub	Sycamore
67	Number of website hits	Sycamore
68	Number of downloads of resources/hits	Birch
69	Track website hits	Birch
70	Website analytics	Birch
71	Website analytics to determine access and use of tools and resources	Willow

Common metric: Creation and upkeep of website

Count	Metric	Network
72	"Knowledge Hub" exists and may include (but is not limited to) resources such as: links to systematic reviews of research, summaries of research studies, actionable evidence-informed resources such as lesson plans, teaching toolkits, checklists; blogs by priority area experts; resources for measuring KMb impact; bios and contact details for researchers with expertise in priority areas; list and contact details for organizations that work directly with priority audiences	Willow
73	Redesigned website exists and is continually updated for disability compliance	Willow
74	Redesigned website exists for research summaries	Willow
75	Project website is supported and maintained	Willow

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Count	Metric	Network
76	Members-only section on the website exists for networks, which may include (but is not limited to): a map of Year 1 KMb milestones and associated activities, a progress chart that indicates the progression of networks toward key KMb milestones, templates networks can use to facilitate their KMb work, resources to draw on in capacity-building workshops, other documents as needed	Willow
77	Number and type of links established on the digital hub	Sycamore

Common metric: Number and type of meetings with key partners

Count	Metric	Network
78	Number and type of meetings with key partners	Sycamore
79	Number and type of virtual meetings	Sycamore
80	Meetings with the partners and other networks	Birch
81	Ongoing meetings with CoP leads	Birch
82	Quarterly planning meetings	Birch

Common metric: Pre- and post-workshop indicators to compare knowledge and skills before and after event

Count	Metric	Network
83	Post activity surveys	Birch
84	Pre- and post-workshop indicators to compare KMb knowledge and skills before and after workshops	Willow
85	Pre- and post-workshop indicators used	Willow
86	Survey results evaluating instructional practice, leadership, achievement, and engagement	Birch

Common metric: Technology purchased to allow for daily operation

Count	Metric	Network
87	Project management software purchased	Willow
88	Subscriptions purchased for file management	Willow
89	Technology purchased to allow for daily operation	Willow
90	Data analysis software purchased	Willow

Common metric: Produce (by both research partners and external research) high-quality and relevant evidence on focal problem

Count	Metric	Network
91	Number, type, and quality of available equity and inclusion research	Sycamore
92	List of areas of interest for knowledge synthesis	Spruce
93	List of meta-analysis or systematic reviews found	Spruce

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Common metric: Social media analytics used in planning and reports

Count	Metric	Network
94	Social media and website analytics have been collected and reported in weekly and monthly reports	Willow
95	Social media and website analytics have been used in ongoing social media planning	Willow
96	Social media and website analytics have been used in ongoing social media planning	Willow

Common metric: Communications sent to network partners

Count	Metric	Network
97	Communications sent to networks	Willow
98	Communications sent to stakeholders	Willow

Common metric: Participating partners/organizations provide capacity-building opportunities to team members

Count	Metric	Network
99	Clarification, consolidation, and reflect	Birch
100	Content experts were hired to facilitate professional development in workshops, where needed	Willow

Common metric: Partners have a shared understanding of problems/strategies/activities being undertaken

Count	Metric	Network
101	Increased understanding of work underway by each CoP	Spruce
102	Shared understanding of project	Spruce

Common metric: Partners routinely work together/collaborate

Count	Metric	Network
103	Identification of opportunities to work collaboratively	Spruce
104	Number of instances of collaboration	Birch

Unique metrics

Count	Metric	Network
105	Number, type, and quality of partner networks and equity activities	Sycamore
106	Variety of venues to researchers, practitioners, policymakers, teachers, parents, and community groups	Sycamore
107	Evaluation structure	Sycamore
108	Number of extended projects	Birch
109	Number of potential leveraging grants	Birch
110	Personnel hired	Birch
111	Level, type, and quality of evaluation activities	Birch
112	Data analytics from practitioner resource website	Birch

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Count	Metric	Network
113	Formed CoPs	Birch
114	Summaries of CoPs current work	Spruce
115	Make arrangements for initial engagement meeting	Spruce
116	New skills are incorporated into networks	Willow
117	Communications sent to the public	Willow
118	Incentives and paid leave provided for participants	Willow
119	Network has made use of a select number of social media platforms to engage priority audiences, promoting network achievements/resources/events	Willow
120	Graphics obtained to support resources and tools	Willow
121	Use of a select number of social media platforms to engage priority audiences, promote network resources and events	Willow
122	Day-to-day usage of office supplies	Willow
123	Documents and supporting resources were printed and utilized	Willow

Appendix B: Needs assessment interview protocol

Thank you for taking the time to talk with us today, we are really glad to have a chance to talk with you about your network. The purpose of our conversation is to orient ourselves to your network; continue building relationships; and see how we can work together to develop a learning framework.

1. Could you tell me a bit about the main goal of the network as it stands right now?
   a. What are the key aspects of your network?
   b. What activity in the initiative do people seem most animated about?
   c. What issue or opportunity is the network trying to address?

2. What outcome are you trying to achieve? Overall? In the next few months?
   a. Why does the work of your network matter?
   b. Who does it matter to?
   c. Who would you describe as your key stakeholders?
   d. What would success look like in your network?

3. What are the biggest strengths/weaknesses of the group?
   a. How do you cultivate trust within your network?
   b. How are decisions made within your network?

4. In what ways do you interact with stakeholders beyond your network?
   a. Policymakers
   b. Other RPPs
   c. Other key players (practitioners, community members)

5. You are already designing implementation plans and evaluation plans as well as other materials about your network, given these, how could the developmental evaluation support your network?
   a. Are there areas where efforts are being duplicated?
   b. Areas where there could be better alignment and cohesion?
   c. What are you really curious about?
   d. What questions seem to come up repeatedly in your conversations with others in your network or with other leads from other networks?

6. What does the network need to pay attention to as it goes forward?
   a. What are the changes you would like to see as a result of your network?
   b. What feels uncertain about achieving these outcomes?

7. Who else is working on this issue locally and nationally?
   a. How are they connected and/or how should they be connected?
   b. What has already been tried?
   c. What can we learn from past attempts and others' efforts?
   d. What types of relationships do you see as critical to carrying out your work and developing your network?