


Rethinking Connections Between Research and Practice in Education: A Conceptual Framework

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Recent efforts to improve the quality and availability of scientific research in education, coupled with increased expectations for the use of research in practice, demand new ways of thinking about connections between research and practice. The conceptual framework presented in this paper argues that increasing research in educational decision-making cannot be simplified to an issue of dissemination or of motivating practitioners to access evidence-based research but rather is a bidirectional problem in which characteristics of both the research and practice communities must be understood and addressed in order to strengthen ties between research and practice in education.

Keywords: accountability; decision making; educational policy; educational reform; policy analysis; research utilization

The problem of knowledge utilization in education, that is the use of research in practice, is complex. On one side of the equation, efforts to improve the quality of education research have been considerable and are marked by the establishment of the Institute for Education Sciences (IES) and an emphasis on the study of educational approaches with rigorous research designs. On the other side, there has been increased attention to the use of research by practitioners at the administrative or implementation levels of the system (Newman, Cherney, & Head, 2016), including state education agencies (Massell, Goertz, & Barnes, 2012), school districts (Corcoran, McVay, & Riordan, 2003; Farley-Ripple, 2012; Finnigan, Daly, & Che, 2013; Honig & Coburn, 2007; Massell & Goertz, 2002), and schools as sites of research use (Behrstock-Sherratt, Drill, & Miller, 2011; Biddle & Saha, 2006; Dagenais et al., 2012; Nicholson-Goodman & Garman, 2007; Malin & Paralkar, 2017; Miretzky, 2007). Despite such investments, however, relatively few recent studies have conceptualized the problem as bidirectional, *jointly* considering the production and use of research and the factors that shape the work of both the research and practice communities. In this paper, we offer a conceptual framework intended to help us to think about research use in schools not merely as a problem of uptake or dissemination but as a collective, multidimensional problem demanding deeper understanding and coordination of the research and practice enterprises.

Background

Historically, concerns for the underutilization of social science research in social policy have resulted in studies that explore the barriers to use in policymaking and local decision processes. The findings of these studies have uncovered weak ties between researchers and practitioners (Backer, 1993; Broekkamp & van Hout-Wolters, 2007; Davies & Nutley, 2008; Landry, Amara, & Lamari, 2001). More recently, federal priorities have demonstrated a renewed emphasis on bridging the gap between research-based knowledge and school practice. Beginning with the No Child Left Behind Act of 2001 (NCLB) and reinforced by the Education Sciences Reform Act of 2002 (ESRA) and the Every Student Succeeds Act of 2016 (ESSA), the U.S. Department of Education has worked to impart explicit expectations for the role of research in informing decisions about education programs, policies, and practice.

At the same time, the legislation specified new criteria for what constituted research knowledge, effectively stipulating the level of rigor of the research designs from which the evidence was derived. NCLB legislation went so far as to include in its definition of scientifically based research “a preference for random-assignment experiments” in impact evaluations of programs or policies. Not long afterwards, ESRA established the Institute of Education

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Sciences (IES), which prioritized funding for randomized experiments (Viadero, 2004). Now ESSA of 2015 continues to emphasize the need for “evidence-based” programs, including tiers of evidence that prioritize randomized experiments and well-designed quasi-experiments (Sparks, 2016).

More than a decade into efforts to transform education research, there are clear indications that after more than a decade of efforts, the nature and rigor of the research produced today is quite different from that of 20 years ago (National Board for Education Sciences [NBES], 2008, 2015). One mechanism intended to make rigorous research available to the field is the What Works Clearinghouse (WWC), which was created by IES in 2002. The WWC reviews, critiques, and synthesizes evidence of impacts of education interventions. At present, the clearinghouse includes several hundred intervention reports and practice guides based on reviews of more than 10,000 studies (IES, 2017).

While shifts in federal policies and programs were working to stimulate the production and dissemination of published rigorous research, NCLB also called for marked changes in school and district policies and practices with regard to the application and use of research (Hood, 2003). For example, NCLB specified the need for the use of scientifically based research to inform instructional decision-making and to make decisions about programs for school reform. As a result, school districts were expected to search for and interpret evidence about program effectiveness and to select programs and practices that have been “clearly demonstrated to be effective through rigorous scientific research” (U.S. Department of Education, Office of Elementary and Secondary Education, 2002).

This expectation continues under ESSA with a new definition of “evidence-based” activities, strategies, and interventions that includes tiers of evidence ordering the rigor of research from (1) randomized experiments to (2) quasi-experiments to (3) correlational studies and finally to (4) strong theories “likely to improve student outcomes” (ESSA, 2015). Although these tiers provide more guidance than the NCLB definition of “scientifically based research,” the selection of “evidence-based” programs and practices by state and local decision-makers is actually less prescriptive than under NCLB.

At its core, federal policy efforts to mandate research use are based on a seemingly obvious premise. The expectation is that research will identify which practices are most effective at achieving the desired outcome (i.e., evidence-based), and when the more successful strategies or approaches are selected and implemented by educators, educational outcomes at local and national levels will achieve meaningful improvements for children and efficiencies for schools or districts.

Although this theory of action has a clear logic, it is based on several assumptions about the relationship between research and practice. The first is that research should be the basis of educational decision-making. We would argue that research, where possible, should *inform* educational decision-making, and elsewhere we have argued for education research as a public good to be used in the service of achieving educational goals (Farley-Ripple, Karpyn, McDonough, and Tilley, 2017). However, we do not hold that research is the only form of evidence that can or should inform decision-making and that

there are other forms, including multiple types of data, what Kennedy (1982b) refers to as “working knowledge,” and parent or community preferences (Biesta, 2007; Marsh, 2006). Although policy to date privileges research and data (and often particular forms of these) over other types of evidence, understanding and strengthening research use in schools entails recognition of the availability and value of other forms of evidence for each decision.

The second, and related, assumption is that a clear and direct relationship exists between research and practice. However, research as a form of evidence is not “value free” (Hood, 2003) but rather is interpreted differently by different stakeholders in different contexts (e.g., Coburn, Toure, & Yamashita, 2009; Finnigan & Daly, 2014; March, 1994). Additionally, practitioner access to and timeliness of research are widely recognized as barriers to utilization (Oliver, Innvar, Lorenc, Woodman, & Thomas, 2014). Complicating the issue further, research is often inconclusive or even contradictory. Different studies produce disparate findings, and there is often insufficient accumulation of evidence across contexts to determine the generalized effectiveness of a given solution (Broekkamp & van Hout-Wolters, 2007; Burkhardt & Schoenfeld, 2003; Davies & Nutley, 2008; Hood, 2003). Furthermore, research may not be “useable” without additional resources and efforts to disseminate both the findings and strategies studied through active professional and interpersonal networks (Havelock et al., 1969; Lindblom & Cohen, 1979; Louis & Dentler, 1988). As such, efforts to understand and express research results in a form or forum that will effectively reach practitioners may pose a significant challenge. As Burkhardt and Schoenfeld (2003) note, “translating research into practice is a decidedly nontrivial task” (p. 4).

The third assumption pertains to “use,” which remains ill-defined in policy as well as research. Much of the literature on knowledge utilization, in education and elsewhere, seeks to document particular types or purposes of use, such as the extent to which evidence is used *instrumentally*—when decision-makers directly and explicitly apply evidence to make a decision or solve a problem—or *conceptually*—describing gradual shifts in terms of decision-makers’ awareness and reorientation of their dispositions (Coburn & Talbert, 2006; Davies & Nutley, 2008; Finnigan et al., 2013; Author, 2012; Penuel, Farrell, Allen, Toyama, & Coburn, 2016). Other research has added purposes such as *strategic*—relating to the manipulation of evidence to attain specific power or profit goals (Huberman, 1990) or to confirm, justify, and elaborate opinions or choices that they have already formulated (Honig & Coburn, 2007)—or *symbolic*—in which users believe the perception of evidence-based decision-making is important but are not engaging with or applying the evidence in meaningful ways (Feldman & March, 1981).

However, an alternative conceptualization of use has been understudied in education research; little attention has been paid to *the practice* of evidence use. Cook and Brown (1999) explain practice as the “coordinated activities of individuals and groups in doing their “real work” as it is informed by a particular organizational or group context (p. 386, as cited in Little, 2011). Little (2011) also suggests practice is also embodied in routines, roles, and tools. In other words, practice is what practitioners actually do and use when engaging with research. A focus on

practice, in contrast to purpose, seeks to explain what activities, routines, roles, or tools are employed during the course of instrumental use, as an example. Although the literature on research use practice is deeper in fields such as public health (Dias et al., 2013; Hoffmann, Montori, & Del Mar, 2014; Li, Y., Kong, Lawley, Weiss, & Pagán, 2015; Michie et al., 2005), there is a strong need to conceptualize practices associated with use due to the complex nature of decision-making in education in which technical, political, and instructional challenges abound (Asen & Gurke, 2014; Fuhrman & Elmore, 2004; Honig, Venkateswaran, McNeil, & Twitchell, 2014).

At the administrative and implementation levels of the system, such as districts and schools, it is particularly important to understand practices associated with research use. Because curricula, changes in instructional practices, and other reforms generally are implemented with coordination across a school or district, and because of increasing demands for evidence use under accountability policy, it is important to understand how research is used to support organizational decisions about instructional improvement and the specific conditions and factors that influence use at these levels of the system. Honig and Coburn (2007) identify this as a historical gap in the literature, noting few studies deal with either search (the process of accessing evidence) or incorporation (what decision-makers do with evidence once they have it), finding that research “rarely discussed the processes by which district central office administrators use evidence” (p. 591). An inadequate conceptualization of use as *practice* risks reducing evidence use to an administrative task rather than multiple activities constituting a political and social practice within a complex organizational process and will unlikely lead to the strengthening of ties between research and practice. Though research is beginning to address routines, participation, and interpretation as components of practice (e.g., Coburn et al., 2009; Honig et al., 2014; Ikemoto & Marsh, 2007; Penuel et al., 2016; Penuel et al., 2017), the field lacks a comprehensive understanding of what evidence-based decision-making looks like in practice—for example, when is evidence brought into the decision-making process? Who engages with it? How is it understood in the local context? How often is it reviewed?

An examination of these assumptions reveals the need for a framework that clarifies the practice of use but that also jointly considers how and why research is produced alongside how and why it is used. Lavis, Robertson, Woodside, McLeod, and Abelson (2003) describe the challenge as developing a “decision-relevant culture” among researchers and a “research-attuned culture” among decision-makers. To influence the relationship between research and practice demands attention to the institutional and professional cultures of knowledge producers and consumers (Bogenschneider & Corbett, 2010).

Below we offer a framework as a means of prompting conversation about the bidirectional nature of the problem and guiding inquiry around connections between research and practice. We first note that this framework is grounded in three key ideas.

First, our understanding of the problem is guided by early work on knowledge utilization, and we draw on the “two communities” metaphor to explore gaps between the research and practice communities. Such a metaphor is appropriate for the

bidirectional nature of the problem of knowledge utilization; that is, understanding the disconnects between communities offers insight into the mechanisms that can support change in both research and practice domains. There are arguments against framing the problem as one of “two communities,” notably that the roles of researcher and practitioner are less distinct than once believed (see Newman et al., 2016, for a discussion). Indeed, our own preliminary work is ripe with examples of engagement between the research and practice community in ways that blur traditional roles. Concurrently, however, we found that the cultures, contexts, and systems in which researchers and practitioners operate, including institutional goals and professional norms and expectations, differ significantly, a problem well-described in Bogenschneider and Corbett’s (2010) work on social policy and described as community dissonance. Thus, a two-communities-driven framework affords the opportunity to both examine the extent and nature of continuing differences as well as reveal contexts in which those differences no longer apply.

Relatedly, we define communities in specific ways. We define the research community as primarily those responsible for generating scholarship that examines educational processes and contexts. We include among producers those in traditional academic institutions as well as think-tanks but also acknowledge this work takes place in a range of organizations, including some school districts, with varying contexts that shape research production. Noted earlier, we define the practice communities as the administrative or implementation levels of the system (Newman et al., 2016), responsible for making decisions that ultimately influence teaching and learning, thus potential users of research. For these reasons, we define the “practice community” in our framework as all school and district practitioners: school district administrators, principals, interventionists, and teachers. As with the research community and research production, we recognize that the dynamics of use will likely vary according to role and context. Principals, for instance, who are often expected to lead innovation and have often received post-graduate training in research design, will likely engage with research in different ways than teachers, while research use looks for difference between schools with higher and lower levels of human or financial resources.

A final key idea informing our framework is the idea of evidence-based practice (EBP) in schools. In the literature, EBP is typically defined as either (a) the extent to which schools implement programs based on scientific research (e.g., implementing a “proven” curriculum) or (b) the practice of incorporating evidence, broadly construed, into decision-making processes (Hood, 2003). We adopt the latter, with particular interest in instrumental uses of research—situations in which research evidence provides new or missing information that informs decision-making, as described by Weiss (1980). We include in our definition of decision-making the process by which schools and districts make major organizational decisions (i.e., those that affect a large number of students and/or faculty) and the process by which individual teachers decide what and how to teach. Thus, research use may involve organizational processes and/or individual processes within schools as organizations. Our attention to instrumental use is in part to understand

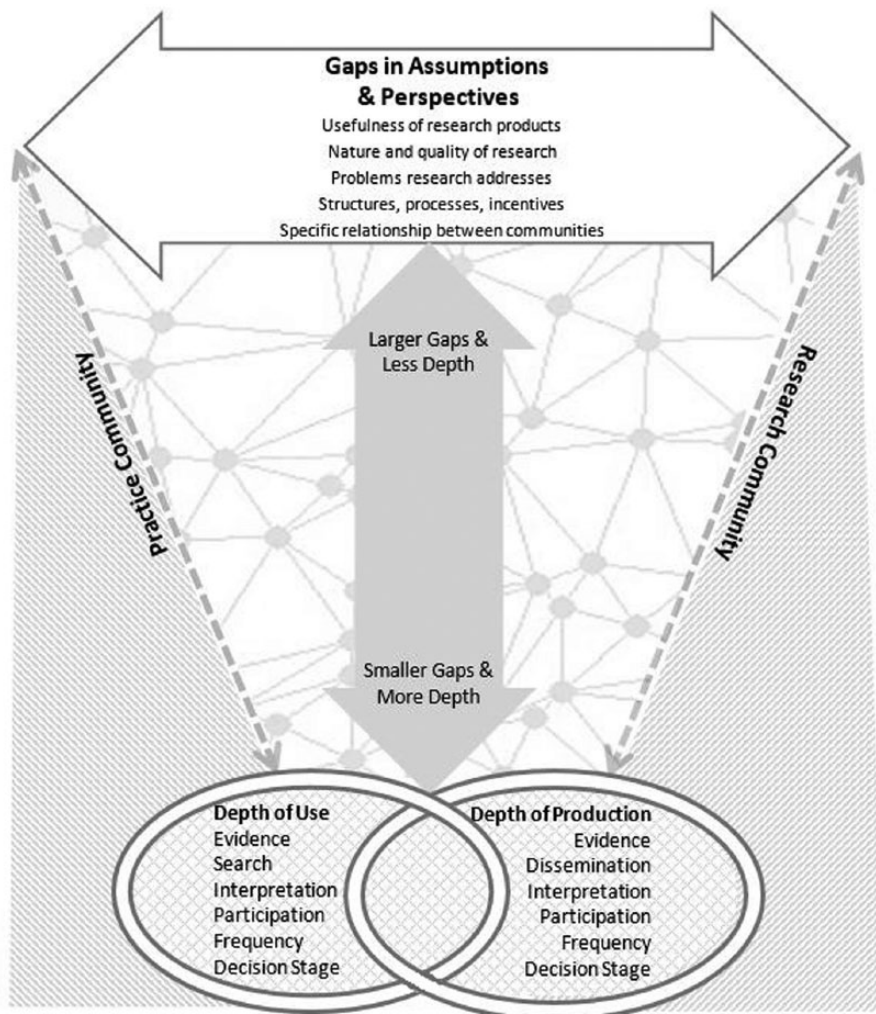


FIGURE 1. *Conceptual framework*

Magnitude of gaps in five key assumptions and perspectives of the research and practice communities as drivers of depth of research use and production along six dimensions.

use as imagined by policies described earlier and is not intended to diminish the value of conceptual, political, or symbolic use in the conceptualization of practice. Additionally, our emphasis reflects a pragmatic goal to identify and elucidate observable dimensions of practice, as we are sensitive to colleagues' claims that "it can be difficult to 'see' the conceptual use of research in action" (Farrell & Coburn, 2016) and encourage others to extend this framework for other forms of use.

Figure 1 presents a detailed visualization of our conceptual framework, with large gaps in five key assumptions and perspectives of the research and practice communities on the top, and gaps becoming smaller towards the bottom, with a concurrent increase in depth of use and production along six dimensions. We elaborate below.

Dimensions of Depth

Coburn (2003) uses the term "depth" to describe efforts to move "beyond surface structures and procedures" in reform implementation. In the same vein, we use *depth* as a means of characterizing practice, as defined earlier, in order to better understand

the activities, roles, routines, and tools by which research meaningfully and systematically informs educational decisions. Our conceptualization of depth—indicated by the links at the narrow end of the gap—lies at the intersection of use and production and includes dimensions of practice that previous literature on organizational and evidence-based decision-making have suggested are important for generating meaningful systematic use. These are labeled as evidence, search/dissemination, interpretation, participation, frequency, and stage of decision-making. The case study from which our conceptualization of depth originated (Farley-Ripple & Cho, 2014) featured three central office decisions, all of which would be considered evidence-based but which engaged evidence along these dimensions in varying ways. For this reason, these dimensions are understood as individual continua along which research use and production practices might vary. As little is known about these dimensions in either schools' use of research or the production of research, we hypothesize what depth might look like in our description of each but anticipate that empirically applications of our framework will improve our understanding of practices that lead to "deeper" ties between research and practice.

Evidence. The first dimension of depth, evidence, is primarily concerned with scientific research and its role in decision-making, with particular attention to the quality and features of evidence produced or used to inform decision-making. This might include whether a researcher produces or a decision-maker uses evidence based on systematic collection of data, support for causality, generalizability, or peer review, among others. However, a substantial body of research suggests that decision-makers draw on a range of evidence sources in the process (Asen, Gurke, Connors, Soloman, & Gumm, 2012; Corcoran et al., 2003; Author, 2012; Honig & Venkatswaran, 2012; Ingram, Louis, & Schroeder, 2004; Kennedy, 1982a; Supovitz & Klein, 2003). Thus our framework is interested in both the use and production of scientific research and its integration with other forms of knowledge or information that may influence decision-making. We therefore conceptualize the evidence continuum as ranging from no engagement in/with scientific research to substantially inclusive of scientific research on the other, with consideration to complexity of evidence used and the relative value of various forms of evidence in use and production processes.

Search and dissemination. Use of research entails effort dedicated to finding (for decision-makers) or making available (for researchers) relevant research sources, which has two important and related aspects: the nature and extent of search. The literature on decision-makers' search, which is drawn primarily from organizational research, finds that the search for a solution is frequently compromised by several factors including haphazard examination (Kennedy, 1982a), preference for internal sources of evidence (Finnigan, Daly, & Che, 2012; Massell et al., 2012), and selection of evidence that fits what decision-makers believe or know (Cohen & Talbert, 2006; Hannaway, 1989; Kennedy, 1982a; Spillane, 1998), as well as organizational mechanisms for disseminating, storing, and retrieving information (Schechter & Atarchi, 2014). Though little work explores how researchers approach dissemination, we anticipate parallel issues for researchers, potentially resulting in dissemination in a range of sources, driven by preferences or assumptions about how their work will be accessed and used. Therefore, at one end of the search continuum, users or producers may do a very limited search or focus on a resource with which they are already familiar. At the other end, they may seek out multiple sources of/for research.

Interpretation. Evidence-based decision-making as articulated in policy assumes that "evidence is neutral and its meaning and implications are self-evident" (Coburn et al., 2009, p. 4). But both theory and research illustrate that evidence must be transformed from information into knowledge in practice (Breiter & Light, 2006; Coburn et al., 2009; Davies & Nutley, 2008; Huberman, 1990; Kennedy, 1982a, 1982b) and as part of the research process through construction of conclusions and implications (Beach, Becker, & Kennedy, 2006). Studies of use and production of research further complicate interpretation. For example, studies note the tendency to use research consistent with current beliefs about educational practice (Birkeland, Murphy-Graham, & Weiss, 2005; Corcoran, Fuhrman, & Belcher, 2001) and differences in how decision-makers frame problems and

decisions (Coburn et al., 2009). On the researcher side, studies in fields other than education have studied and problematized the construction of "implications for practice" (Bartunek & Rynes, 2010). Thus, the process of interpreting research in the context of both research production and educational decision-making is important and complex. The continuum of interpretation seeks to better articulate the strategies and extent to which decision-makers interpret/generate research in informed and critical ways.

Participation. Evidence may have multiple meanings, as illustrated in the interpretation dimension. Understanding who participates in research production or use is important because individuals' working knowledge, ideologies, information, and interests, and their interaction and negotiation with other participants, influences how evidence is interpreted (Coburn et al., 2009; Finnigan & Daly, 2014; Kennedy, 1982a, 1982b; Weick, 1995; Weiss, 1995). And from the production side, broad participation by practitioners can fundamentally shape the process, from questions to methods to interpretation (Lieberman, 1986; Penuel, Allen, Coburn, & Farrell, 2015). Therefore, *who* participates is as important as the evidence itself. Weick (1993) describes how decisions made by individuals in isolation can be prone to bias, error, and misinterpretation by others. On the other hand, research has found organizations can be more responsive to problems when multiple perspectives come together in unraveling them (Eisenhardt, 1990; McDaniel & Walls, 1997; Rivkin & Siggelkow, 2002) and that solutions depend on who participates in the decision (Cohen, March, & Olsen, 1972). Understanding participation then entails a continuum in which one or few individuals are engaged at one end and where collaborative groups spanning organizational (as well as research and practice) boundaries are engaged on the other.

Frequency. In describing the depth of evidence use, frequency is an indicator of the extent to which use and production are part of organizational routines and processes (Feldman & Pentland, 2003; Feldman & Rafaeli, 2002; Spillane, Parise, & Sherer, 2011). Studies typically document how often decision-makers use research as a way of assessing the impact of use—Does it play a role sporadically, or is it institutionalized in decision-making practices? Although no research exists in this specific domain, the regularity with which research evidence is brought to bear on decisions may be an indicator of greater or lesser systematic use. Similar questions might apply to the production of research: How frequently are other dimensions, such as production of particular types of evidence, dissemination, interpretation, and participation, part of the research process?

Decision stage. Research may play a role at various points in a decision. Organizational theory is ripe with models of decision-making ranging from rational and linear to political, yet most models include dimensions related to understanding problems, identifying potential solutions, and selecting and implementing solution strategies. It is important to note, however, that the sequence and way in which these processes occur can vary significantly. For example, the so-called garbage can model (Cohen et al., 1972) applies to situations characterized by problematic

preferences, unclear technology, and fluid participation (features we have described above as common to decision-making in education) and finds decisions then are the outcomes of several organizational streams: problems, solutions, participant attention, and choice opportunities. In that model, evidence use emerges in several locations, including problem identification and the stream of solutions, though use of that information remains dependent on organizational conditions surrounding participants and choice opportunities.

However, in studies of decision-making in education, there is limited exploration of the points at which decision-makers use evidence. Coburn et al. (2009) find differences in evidence use in diagnostic framing (how the problem is defined) and prognostic framing (identifying appropriate solutions). Further, organizational theorists often find that information is used as justification only after the selection of a preferred solution (Pfeffer & Salancik, 1977; Simon, 1964; Staw, 1980)—a form of political or symbolic use that locates evidence use in reference to other stages of decision-making. Similarly, particular forms of research may be more or less useful at given points in the decision process. For example, Author (2008) suggests that different types of evidence may be preferred (or valued) in different stages of central office decisions. From the research production side, it is important to understand whether and how researchers anticipate their work to be useful in the decision-making process. Though limited, literature to date suggests that timing is an important element in understanding the depth of research use and production.

Gaps in Assumptions and Perspectives

The horizontal arrow in the conceptual framework represents our approach to understanding the factors influencing use. We look to Dunn's (1980) five categories of culture as dimensions of the "gap" between research and policy communities: products, inquiry, problems, structures, and processes. As we seek to understand differences between research and practice communities in the education context of the 21st century, we interpret these five categories, or gaps, as relating to assumptions and perspectives about the usefulness of research products; the nature and quality of research; problems that research addresses; the structures, processes, and incentives surrounding research production and use; and the relationships between communities.

Usefulness of research products. The first gap, usefulness of research products, builds on research that finds the type and characteristics of research products influence their use in schools (Corcoran et al., 2001; Gross, Kirst, Holland, & Luschei, 2005; Reichardt, 2000; West & Rhoton, 1994). From the research community perspective, usefulness can be understood as the range of products produced, their intended audience, and how they are anticipated to be used. From the practitioner perspective, usefulness relates to frequently accessed resources and the preferences underlying those choices. For example, Author (2012), Finnigan et al. (2012), and Penuel et al. (2016) offer lists of frequently utilized sources and their characteristics. The usefulness dimension of the gap represents the degree to which products produced and valued by researchers aligns with those preferred by practitioners.

Nature and quality of research. This gap pertains to differences in how the two communities value different qualities of research, including issues related to internal and external validity as well as conclusiveness of findings. For example, the WWC employs standards that place great weight on internal validity for drawing causal inference (i.e., randomized experiments). In contrast, school-based decision-makers often prefer evidence from organizations or contexts (e.g., demographics, location, performance) similar to their own, regardless of study design (Corcoran et al., 2001; Finnigan et al., 2012; Supovitz & Klein, 2003), which suggests a lesser concern for most dimensions of research design. These preferences raise questions about how practitioners value research methods (Broekkamp & van Hout-Walters, 2007) or, alternatively, their capacity to critically interpret research (Reichardt, 2000; Supovitz & Klein, 2003; West & Rhoton, 1994). The extent to which researcher standards and practitioner preferences are similar or different is an indication of the nature/quality dimension of the gap.

Problems addressed by research. This dimension of the gap suggests that there may be issues related to the relevance of research. From the research community perspective, this concern relates to decisions about what should be researched and to what degree research is able or available to address current problems of practice (Maynard, 2006; Penuel et al., 2016). From the practitioner perspective, the characteristics of problems of practice, including both the issue (e.g., instructional, organizational) and the nature of the problem (e.g., identifying the range of potential solutions vs. choosing to adopt a specific solution), may influence the role of research in solving those problems (Supovitz & Klein, 2003; West & Rhoton, 1994). The extent to which the evidence produced by the research community is timely and relevant to the problems confronting real schools is an indicator of this dimension of the gap.

Structure, process, and incentives. This dimension of the gap is concerned with the context in which researchers and practitioners operate and what influences researchers to produce certain kinds of research and what influences practitioners to use research or other evidence (Burkhardt & Schoenfeld, 2003; Coburn & Turner, 2012; Landry et al., 2001). A range of conditions influence use, including organizational structure, culture, and leadership (Corcoran et al., 2001; Finnigan et al., 2012; Honig et al., 2014; Massell et al., 2012; Penuel et al., 2017; Spillane, 1998; Weiss, 1995; West & Rhoton, 1994). For example, the presence of the research and evaluation division within the central office is a structure that can foster deeper research use within the district, as well as organizational routines such as meetings (Penuel et al., 2017). As contextual factors related to structures, processes, and incentives influence research use, it is important to understand when and to what degree these factors increase or reduce the gap between research and practice communities.

Relationships between communities. Research use may be considered a function of the relationship between communities in the production of research and in education decision-making (Backer, 1986; Coburn & Stein, 2010; Cousins & Simon, 1996; Honig & Venkateswaran, 2012; Huberman, 1990; Landry et al.,

2001; Lavis et al., 2003). Lavis et al. (2003) categorizes relations as producer pushed (e.g., dissemination), user-pulled (e.g., active search by users), and exchange (e.g., interaction between users and producers during key processes). We also recognize the importance of understanding *indirect* relationships via various organizations and people positioned at “the interface of the world of researchers and decision-makers” (Ward, House, & Hamer, 2009). They may serve as *research brokers*, *intermediaries*, or *boundary spanners* (Neal, Neal, Kornbluh, Mills, & Lawler, 2015) and may be found within either the research or practice community as well as in a “third space” in between the research and practice. Though literature in the context of education is still limited, they are widely viewed as levers for connecting research and practice and therefore important to understanding relationships between research and practice.

Applications of the Framework

When conceiving of this framework, we developed several hypotheses to guide our empirical work (in progress). Specifically, we hypothesize that in contexts where gaps between those communities are largest along these dimensions, there will be greater community dissonance (Bogenschneider & Corbett, 2010) resulting in the least research use, or research use that lacks “depth,” as indicated by the wide gap between the dotted lines representing communities’ assumptions and perspectives. Similarly, we hypothesize where those gaps are minimized or that experience less community dissonance (i.e., where the dotted lines converge on the bottom), we will see greater and deeper use of research. We imagine that these gaps are driven by both characteristics of individuals and of their organizations, as well as potentially mediated or moderated by brokers that connect the two communities. For example, a school’s strong connections to the research community may be attributable to one school leader whose assumptions about research and evidence mirror those typically valued by researchers or a school may engage deeply with research as a result of a relationship with an intermediary organization focused on supporting implementation of EBPs.

Beyond our hypotheses, the framework may also help to deepen our understanding of emerging trends that appear to incorporate a similar perspective about the bidirectionality of the issue. One is the emergence of research-practice partnerships (RPPs), which are described as long-term collaborations organized to investigate problems of practice and generate solutions for improving educational outcomes (Coburn, Penuel, & Geil, 2013). These collaborations build direct relationships between research and practice through models such as networked-improvement communities (NICs) or research alliances and are uniquely positioned for improving research use in educational organizations as they shift from traditional models of research use as dissemination and uptake to co-construction. Our framework may be useful in comparing, expanding, or improving RPPs, as called for by scholars in this field (Coburn & Penuel, 2016) by understanding how different models map onto the dimensions of our framework. For example, increased funding for RPPs, such as that offered by the IES beginning in 2013, may alter the incentive structure towards deeper research production. On the other hand, NICs may help with issues related to

timeliness or capacity because of its multisite nature. Further, and perhaps more importantly, the framework could be used to understand how production and use change as a result of these strategies, building evidence of effectiveness as well as opportunities to learn from and improve these models.

A related second field is work on research brokers. Brokers have been identified as one type of linking mechanism and may include institutions, dissemination outlets, funding organizations, advocacy groups, reform organizations, and other types of actors. As research use may not result from direct interaction between school practitioners and researchers, recent work finds the two are often linked through intermediary organizations (Neal et al., 2015; Scott, Lubienski, DeBray, & Jabbar, 2014). Related research has found that the products and venues created by research brokers have greater value for reaching practitioners (Cooper & Levin, 2010; Massell et al., 2012; Rowan, Correnti, & Miller, 2002) and that organizations have served in this role in efforts to support reform implementation at the local, state, and national levels (Scott et al., 2014). Our framework may be instructive for identifying dimensions of the gap between research and practice brokers are positioned to mediate as well as the capacities intermediaries may need to develop to be effective in research broker roles. For example, research brokers are already recognized as addressing gaps pertaining to the usefulness of research products through translation and dissemination, but in contexts or on issues where gaps pertain to the problems research addresses, there may be opportunities for intermediaries to serve an important communication function from *practice to research* as well.

We highlight these two examples as evidence of the relevance of the framework to current efforts to strengthen the relationship between research and practice. However, we imagine many other applications of the framework that can drive empirical work in this area as well as help to identify the mechanisms that link research and practice in ways that generate deep use of research.

Implications

The framework described above is intended to generate new thinking on the ways in which practice, research, and evidence use are interrelated or not and what pressure points might be used to move multiple parts of this system. By determining dimensions of use and potential gaps in assumptions and perspectives, the model seeks to uncover, and potentially reimagine, the ways in which research evidence is produced, communicated, and ultimately used. The model seeks to motivate researchers to expand or augment the fields’ understanding of research use and in so doing, measure, test, and potentially shift existing approaches to connecting research and practice to foster depth. We intend for it to guide inquiry—testing relationships among dimensions of depth and of gaps, determining which are most problematic or helpful in stimulating new approaches to bridge these gaps. Furthermore, there is an opportunity to use the model to identify the conditions in which the gaps are wide versus narrow and to learn what factors are most instrumental in creating environments that support or hinder research use in schools.

The model also seeks to unpack and describe the pathways by which research influences practice. This includes the explicit use of published research to support organizational decisions about programs and policies as well as less explicit and perhaps indirect use of research shaped by the brokering roles played by researchers, practitioners, and intermediary organizations. Recognizing these nuances is likely to move our conception of research use away from the simplistic linear model implied by federal legislation and toward a more realistic understanding of the complex and bidirectional process by which research can inform practice and practice can inform research.

We acknowledge this is not the first, nor the last, model developed to inform our thinking about research use. As elaborated upon in Nutley, Walter, and Davies (2007), there are many models of the research-practice relationship that focus on linkages, networks, process, and interaction, and our work is informed by these ideas. We note that few frameworks are born from study of the contemporary education system, which we argue is different in important ways from other fields, such as health sciences, and few focus on practice as opposed to policy. Still others are normative in nature—proposing ways the relationship between research and practice “ought to work” or complex in ways that make it hard to apply across contexts or fields. Though we prefaced this work with a statement that we believe research should have a role in educational decision-making, our intent here is to add to the ways we think about research and practice in the context of education specifically and to create a framework flexible enough to explore and discover dimensions of this relationship rather than prescribe them.

As our model is used and tested, it should serve as a stimulus to better define the knowledge, skills, and motivators necessary to promote the use of research, thus challenging researchers and practitioners to rethink their roles in that process. Articulation of the principal components of the model will raise important questions about what might stimulate practice shifts for the research as well as practitioner communities. Both may need to build new knowledge and skills to bridge current gaps but will need longer term mechanisms to maintain progress and foster continued advancement of our understanding of how best to achieve knowledge utilization in schools.

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