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Adaptive Assistance for Learning Improvement Efforts: The Case of the Institute for Learning

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Adaptive Assistance for Learning Improvement Efforts: The Case of the Institute for Learning

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Districts across the country face significant demands to strengthen student learning districtwide, and many are turning to intermediary organizations to help them build their capacity for such demanding, large-scale work. However, how these "learning-support intermediary organizations" assist with these capacity-building efforts is little understood. This article reports data from a largely qualitative investigation into how one such intermediary organization, the Institute for Learning (IFL) at the University of Pittsburgh, partnered with multiple urban districts to help build district capacity for districtwide learning improvements. Our conceptual framework draws on sociocultural learning theory to identify key features of the IFL-district assistance relationships that seem associated with these outcomes. We utilized data from interviews, observations, document reviews, and focus groups conducted over a five-year period. Findings elaborate specific features of their assistance relationships—which we call adaptive assistance relationships—such as enabling particular forms of modeling, tools, and opportunities for rich dialogue. We conclude with implications for the research and practice of districtwide learning improvement efforts and the participation of intermediary organizations in the process.

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Within the last 15 years, school districts have come under increasing pressure to enhance their capacity to play key leadership roles in strengthening student learning districtwide, and many have called on intermediary organizations to help them in the process (Coburn, 2001; Honig, 2004). For example, local organizations such as the Center for Educational Leadership at the University of Washington partner with districts overtime to coach school in strengthening student learning and, in tandem, help district leaders shift their own practice to provide such assistance themselves (Gallucci, Boatright, Lysne, & Swinnerton, 2006). In the 1990s, design teams participating in the New American Schools initiative worked between schools and their central offices to support implementation of whole-school improvement strategies (Berends, Bodilly, & Kirby, 2002; Datnow, Hubbard, & Mehan, 2002). We call these organizations "learning-support intermediaries" because they focus their work specifically on supporting learning improvements and because they occupy a distinct position between central offices and schools where they aim to leverage changes at both levels (Honig, 2004). What more specifically are the activities of learning-support intermediary organizations that seem associated with increased district capacity for learning improvements? Education policy researchers have only begun to elaborate distinct roles for intermediary organizations and their particular contributions to districtwide learning improvement efforts.

We aim to add to this emerging research base by drawing on over more than five years of data on the Institute for Learning (IFL)—which is housed at the University of Pittsburgh—and its learning-support relationships with eight urban districts across the country. The IFL provided a strategic opportunity for this inquiry because it has sustained partnership relationships with multiple districts over almost a decade, specifically around building school- and central-office capacity for strengthening student learning districtwide and because the IFL seems to have contributed to demonstrable improvements in district capacity in a number of respects. The IFL also had access to various fiscal and intellectual resources typically in short supply in external support organizations (Bodilly, Glennan, Kerr, & Galegher, 2004). Accordingly, the IFL promised to demonstrate intermediary-district partnerships functioning at a reasonably high level. Our data come from 264 interviews, more than 232 hr of observations, and focus group and archival data. We used sociocultural learning theory to analyze our data because it promised to help reveal features of assistance relationships associated with deepening practitioners' engagement in complex work practice.

We found that our conceptual framework captured major dimensions of the IFL-district assistance relationships including certain forms of modeling, tools, and social opportunities. We call these relationships "adaptive assistance relationships" to emphasize their dynamic and locally constructed nature. We draw on the IFL case to suggest future directions for the research and practice of districtwide

learning improvement efforts and the participation of intermediary organizations in the process.

INTERMEDIARY ORGANIZATIONS AND DISTRICTWIDE LEARNING IMPROVEMENT EFFORTS

Research on districtwide efforts to strengthen student learning is a relatively recent literature that has begun to mushroom within the last 15 years (e.g., Corcoran, Fuhrman, & Belcher, 2001; Elmore & Burney, 1998; Hightower, Knapp, Marsh, & McLaughlin, 2002; Hubbard**,** Mehan, & Stein, 2006; Murphy & Hallinger, 2001; Snipes, Doolittle, & Herlihy, 2002; Spillane et al., 2002; Spillane & Thompson, 1997). This research seems to converge on a few key findings about these efforts, and we used these findings to frame our research questions. For one, the engagement of central office administrators, school principals, and teachers in student learning improvement is itself a problem of learning—a challenge of supporting professional learning throughout district systems (e.g., D. K. Cohen, 1982; McLaughlin, 2006). For example, from a cognitive learning perspective and across multiple districts, Spillane and colleagues have demonstrated that how school principals and central office administrators make sense of complex reform demands significantly mediates their responses to those demands (Spillane, 2000, 2002; Spillane et al., 2002). Hill, Coburn, and others have elaborated these findings with examinations of teachers and school principals (Coburn, 2001, 2005; Hill, 2001). The literature on teacher professional learning communities also demonstrates that particular forms of collaboration among teachers fosters teacher learning in ways that can bolster teachers' professional practice and student learning (e.g., McLaughlin & Talbert, 2001; Scribner, Cockrell, Cockrell, & Valentine, 1999; Scribner, Hager, & Warne, 2002). Some researchers (e.g., Leithwood & Louis, 1998) have argued that continuous improvement processes that engage teachers and principals, sometimes called "organizational learning," are essential to learning improvements. Examinations of San Diego school's efforts to foster professional learning across all levels of the district reinforce such findings (e.g., Hubbard et al., 2006).

Two, supporting professional learning represents nontraditional work for many district practitioners. Accordingly, even those with strong political will and significant resources to support professional learning struggle with implementing professional learning support systems. For example, Corcoran et al. (2001) chronicled how efforts to strengthen student learning in three districts were curbed by various conditions including uncertainty among central office administrators regarding how they could participate productively in the implementation of such efforts. Hubbard et al.'s (2006) multiyear examination of San Diego's "reform as learning" revealed that teachers, principals, and central office administrators

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alike struggled with limited knowledge of and experience with the new work practices that learning improvement initiatives aimed to promote. Some suggest that districtwide improvement efforts fundamentally demand that leaders "manage ambiguity" (Honig, 2001) or "learn to lead what they don't yet know" (Swinnerton, 2006) and that supports for such learning-on-the-job can be few and far between.

Three, some external organizations seem to offer important assistance with these professional learning processes. For example, the Center for Educational Leadership mentioned earlier provides key assistance mainly to school principals and teachers in strengthening their professional practice around reading and literacy. Stein and Brown's examination of QUASAR also revealed how external organizations bring coaching resources to districts that seem to contribute to demonstrable learning improvements (Stein & Brown, 1996). These and related studies suggest that certain external organizations may help improve district capacity for learning improvements. However, they also show that these organizations are associated with these improvements at only a handful of participating schools absent central-office reform or engagement of professionals throughout district systems in particular work practices (Berends, Chun, Schuyler, Stockly & Briggs, 2002a, 2002b; Bodilly & Berends, 1999; Datnow, Hubbard, & Mehan, 2002; Kirby et al., 2002). These findings suggests that a particular type of external assistance provider may be important to districtwide learning improvements—intermediary organizations or organizations that work between levels of hierarchical district systems (e.g., between classrooms, teachers and principals, principals and central office administrators) to engage practitioners at all levels in deepening their work practice in support of student learning (Honig, 2004). What do learning-support intermediary organizations do when they seem to strengthen district capacity for districtwide learning improvements?

CONCEPTUAL FRAMEWORK[1]

Building on the emerging literature on reform as learning, we turned to ideas from sociocultural learning theory to ground our inquiry into the participation of intermediary organizations in these processes. This strand of learning theory seemed particularly appropriate to this inquiry because it elaborates what deepening professional work practice entails and how assistance relationships matter to such professional development.

By many accounts, sociocultural learning theory stems from the work of Vygotsky and his students and colleagues such as Leont'ev. These scholars explored how learning unfolds not through an individual's acquisition of information

[1]This conceptual framework is adapted from Honig (in press).

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but through an individual's engagement with others and various artifacts or tools in particular social, historical, and cultural contexts (Vygotsky, 1978). Through such engagements, learners socially construct the meaning of particular ideas and in the process develop and also potentially shape the habits of mind of their cultures (Wertsch, 1996; Engestrom & Miettinen, 1999; Wertsch, del Rio, & Alvarez, 1995). Some have emphasized that these activities may be understood as joint work practices and that individuals participate in these practices as part of a community of others (i.e., a community of practice per Lave, 1996; Lave & Wenger, 1991; Rogoff, 1994; Rogoff, Baker-Sennett, Lacas, & Goldsmith, 1995; Wenger, 1998).

Within these communities of practice, various supports or "scaffolding" help learners deepen their engagement in particular work practices (Vygotsky, 1978). These supports include assistance from others more deeply engaged in or experienced with those practices (e.g., Derry et al., 2000; Tharp & Gallimore, 1988; Wenger, 1998). These forms of assistance move beyond generic calls for districts to send coaches or to deliver new information about educational improvement to schools. Rather, these forms of assistance involve relationships that make particular resources available to principals and teachers. As we elaborate next, these resources include brokering, new models of professional practice, valued identity structures that reinforce those models, dialogue-rich social opportunities, and tools that focus practitioners on particular "joint work." We suggest that a third party such as an intermediary organization may be particularly well suited to these activities. Many of these activities demand an ability to demonstrate challenging teaching and leadership practice that may be rare within district systems—or else instances of learning improvements would be more common than they seem to be. In addition, many of these activities are substantial areas of work that may lie beyond what district practitioners can typically add on or integrate into their own ongoing professional demands.

Brokering

Wenger and others have emphasized that participants in assistance relationships enable learning in part when they operate as brokers or boundary spanners—individuals who move between communities of practice and their external environments (including other communities of practice). Brokers may bridge communities to new ideas and understandings that may advance their engagement in particular work practices. They also may buffer those communities from potentially unproductive ideas and understandings (Wenger, 1998). Brokering seems particularly productive when brokers do not simply pass knowledge resources across organizational boundaries but translate them into forms that the receiving community may be particularly likely to understand and use (Cobb & Bowers, 1999).

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Modeling

Participants in assistance relationships support engagement in new work practice by modeling or making available those who model forms of practice (e.g., school leadership, classroom teaching) that foster particular outcomes (e.g., high-quality teaching and learning; Brown & Campione, 1994; Tharp & Gallimore, 1998). By observing and systematically analyzing models, practitioners may develop a conceptualization of the new work practices prior to engaging in them—conceptualizations that theorists argue are essential to execution especially at deep levels of participation (Collins, Brown, & Holum, 2003). Such conceptualizations provide

> an advanced organizer for the initial attempts to execute a complex skill, . . . an interpretive structure for making sense of the feedback, hints, and connections from the master during interactive coaching sessions, . . . and . . . an internalized guide for the period when the apprentice is engaged in relatively independent practice. (Collins et al., 2003, p. 2; see also Lave, 1996)

Furthermore, models sustain practitioners' engagement in particular promising endeavors by infusing those endeavors with value and increasing practitioners' confidence that they may be on a trajectory to deepen their engagement in those work practices (Brown & Duguid, 1991).

Particularly powerful models employ meta-cognitive strategies of bringing "thinking to the surface" and making it "visible" (Collins et al., 2003, p. 3; see also Lee, 2001)—for example, by engaging others in dialogue about the purposes and nature of the practices—so others know not just what participation in these practices entails but why they should participate in particular ways. Powerful modeling also involves a strengths-based approach in which the modeler helps others to identify their strengths and to build on those strengths to develop other competencies (Lee, 2001). These forms of modeling involve not a generic set of supports but assistance reasonably fine tuned to the developing capacity of all participants.

Some elaborate that particularly powerful forms of modeling are reciprocal (Tharp & Gallimore, 1988; Wenger, 1998)—that in helping others deepen their engagement in particular work practices, modelers also continually examine and transform their own participation in the process. In this view, assistance becomes a mutual learning relationship.

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Establishing and Reinforcing Valued Identity Structures That Legitimize Peripheral Participation

These structures include markers that indicate progressive degrees of participation such as the badge system in the Girl Scouts (Rogoff et al., 1995). Such identity structures help participants recognize that even those who are not yet participating fully in a particular work practice may nonetheless be on a trajectory toward deeper participation and as such they are valued members of the community (Wenger, 1998). Some call such participation novice or "peripheral" in part to signal that it is on the outside but somewhere within the range of stronger performance. They argue that individuals tend to deepen their engagement in various activities when they see themselves as valued participants in the activities and as people capable of deepening their engagement, regardless of their starting capacity.

Creating and Facilitating Dialogue-Rich Social Opportunities

As previously noted, social engagement is fundamental to learning; the active construction of meaning unfolds not mainly within practitioners' minds but as practitioners interact with one another (Weick, 1995). Through social interactions within communities of practice participants increase the individual and collective knowledge brought to bear on situations (Lave & Wenger, 1991; Wenger, 1998; see also Holland, Lachicotte, Skinner, & Cain, 1998). Through dialogue, participants have opportunities to challenge each others' beliefs and interpretations of problems and events. Such dialogue can lead to new shared understandings and deeper engagement in particular activities than would otherwise be possible by individuals operating alone (Brown & Duguid, 1991). The models and identity structures just discussed may operate as resources for learning only provided community members have opportunities for social engagements with others through which they may observe those models in action (Wenger, 1998).

Developing and Continually Elaborating Tools

Tools are "reifications," the manifestations of ideas (Wenger, 1998) or, in simpler terms, the specific form that new ideas about work practices may take. Tools help deepen individuals' engagement in particular work practices by "specify[ing] the parameters of acceptable conduct," communicating messages about what individuals should and should not do. At the same time, "their meaning is not invariant but a product of negotiation with a community" (Brown & Duguid, 1991, p. 33). Accordingly, tools also operate as jumping-off points for practitioners to define new conceptions of acceptable conduct. These structures can serve as origins or "the kernel that provides the pretext for assembling" elements in the first place

(Weick, 1998, p. 546). As such, tools do not prescribe action but "trigger" negotiations among individuals about which actions to take toward meeting particular goals (Brown & Duguid, 1991). They may "be seen as liberating in their enabling function or limiting in that their historical uses may preclude new ways of thinking" (Smagorinsky, Cook, & Johnson, 2003, p. 1407).

Conceptual tools include "principles, frameworks, and ideas" (Grossman, Smagorinsky, & Valencia, 1999, p. 13). These tools are generally designed primarily to frame how people conceptualize particular problems or issues. *Practical tools* provide specific examples of "practices, strategies, and resources" that have "local and immediate utility" (Grossman et al., 1999, pp. 13–14). Conceptual tools aim to shape participation across multiple activity settings whereas practical tools are generally constructed around particular types of activity settings.

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Focusing Engagement in "Joint Work"

Assistance relationships appear to foster learning when they focus participants on "joint work" (also called a "joint enterprise" or "authentic situation"; Rogoff, 1994; Rogoff et al., 1995; Wenger, 1998; see also Brown, Collins, & Duguid, 1989). Joint work includes activities that participants value and that promise to help deepen their engagement in particular forms of work practice. Accordingly, the concept of joint work serves in part to reinforce the reciprocal nature of the assistance relationships by emphasizing participants' engagement in activities that all parties find meaningful. People in assistance relationships support engagement in joint work by providing opportunities for others to co-construct the meaning of particular challenges and the potential fit of strategies to address those challenges (Wenger, 1998).

RESEARCH DESIGN AND METHODS

These learning theory concepts grounded our analysis of the IFL's engagement in assistance relationships with eight urban districts. We used a retrospective, cross-sectional, and largely qualitative case study design. Retrospective data on IFL history allowed us to examine the IFL's theory of action about how to support districtwide learning improvements from its inception in 1995 to the start of our real-time data collection. The cross-sectional component helped us interrogate how the IFL operated in practice as that practice unfolded. A qualitative focus seemed particularly appropriate given the situated nature of the IFL's work and the importance of capturing rich accounts of their work processes and how participants made sense of them as described next.

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The IFL Case

The IFL provided a rich and particularly appropriate case for this inquiry. Since 1995, the IFL has worked with several districts with a main goal of strengthening learning for all students districtwide (Glennan & Resnick, 2004). Accordingly, the IFL stands apart from some other intermediary organizations in its districtwide change focus. Assisting district performance was an explicit, core dimension of their district partnership strategy. The founder and director of the IFL, Lauren Resnick, and other IFL staff reported that they aimed to work with key central office staff and principals to build their own capacity to assist teachers and others with learning improvement efforts. As Resnick explained,

> We're trying to build a professional development system that will train teachers eventually but our work will tend virtually always to be with those in the district who do the teacher training . . . . So it's our job to build that district capacity.

At the time of our study, the IFL employed approximately 25 full-time staff people called "fellows," whom it deployed to districts to participate directly in these assistance relationships on behalf of the IFL. In interviews over time, these fellows invariably referred to their intended roles as assisting with districtwide student learning improvements by helping build local capacity for such outcomes.

Since its inception, the IFL has received core operational support from the University of Pittsburgh as well as from several national foundations. The IFL's partner districts provide an ongoing source of revenue by paying for certain IFL services. The IFL's relatively long-term success in garnering diversified funding suggested it might demonstrate activities of a relatively high-functioning intermediary not impeded by the predictable pitfalls of an organization in start-up mode or regularly threatened by significant budget constraints.

Furthermore, the IFL seemed to offer a case of an arguably "successful" intermediary organization. The RAND Corporation and others across multiple studies have associated the IFL's efforts with particular outcomes that suggest IFL's assistance may be helping districts advance along a trajectory of deeper engagement in supporting learning improvements (Marsh et al., 2005). These outcomes include shifts in central office administrators' thinking about and engagement in supports to school principals, the development of formal district policies that aim to enable this thinking and participation, indicators that school principals are working more closely with their teachers to enrich their practice, principals' increased skills and knowledge in specific content areas and pedagogy generally, and some very modest improvements in teachers' practice.

However, prior research on the IFL is limited in that it did not attempt to link the IFL's work with actual changes in student performance. We acknowledge this limitation here and address it in the framing of our findings. Specifically, we do

not claim that the IFL's activities have directly caused improvements in student learning. Rather, we emphasize that prior reports have associated the IFL's work with some changes in how school principals and central office administrators think about and engage in their work in ways that theory and experience suggest matter to learning improvements. We aim here to elaborate the features of the IFL-district relationships associated with those changes in professional work practice.

This approach seems particularly appropriate given the contingent nature of the IFL's work and the nascent stage of research on how to tie such work to student learning outcomes. As Resnick articulated,

> We don't know that we can trace everything that's going on there [a partner district] to us, but we don't intend to anyway. . . . Unlike the whole school model that's trying to say "Do it this way." . . . [We] work with the districts . . . to help them choose and coordinate all the different kinds of things they're doing [rather than create a new intervention for which we can unambiguously take credit]. . . . We can't be the direct solver of the problem. But once we see it clearly . . . if the time is right. ... Then what we hope to do is not to be the designer of the solution but to be in that conversation so that the solution comes out instructionally as powerful as possible.

Various comments by other IFL staff and district practitioners confirm such difficulties in tracing specific outcomes to IFL actions. As one IFL staff member explained,

> There's lots of things that I could point to and say, yeah . . . that was something that the IFL pushed. . . . But . . . if you asked [a district central office administrator] where she got those ideas from . . . I've seen her leave [IFL] retreats and sessions saying, I learned nothing today and then six months later I see her enacting some of the things that came up in the meeting. Is she conscious that there might be a link between the two? I don't know.

Given these considerations, we chose an intermediary organization that other research associates with helping shift district work practices in ways that may be associated with student learning improvements. We aim to elaborate what this organization does and, where possible, to link those activities with reports from various reform participants about relationships between activities and outcomes. Such examinations of intermediary work practice can provide important anchors for future outcome studies as we discuss in our concluding section.

Data Collection

We draw on data collected between 2001 and 2006. Data from 2001 through 2005 come from two mixed-methods studies of the IFL's relationships with eight

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urban districts conducted by one of the paper authors and colleagues at the RAND Corporation (Marsh, Kerr, Ikemoto, & Darilek, 2006; Marsh et al., 2005). These investigations surfaced a sizeable dataset, but reports on these investigations to date have been limited to basic descriptions of IFL activities (e.g., frequency of meetings with staff) and not grounded in an explicit theoretical framework. Between 2005 and 2006, both of the authors of this article conducted additional data collection activities in one of the original eight districts and in another district that initiated a partnership with the IFL within the past two years. We framed this second wave of data collection centrally around the conceptual framework highlighted previously.

Interviews. We reviewed notes and transcripts from interviews with 251 respondents conducted between 2001 and 2005: 80 district and community leaders, 73 principals, 30 assistant principals, 50 school coaches, and 18 IFL leaders and staff. Between 2005 and 2006 we conducted additional interviews with 11 IFL staff members—including four who had not been interviewed during previous data collection—and 14 district leaders, among them nine who had not been interviewed during previous data collection. The district interviewees were superintendents, chief academic officers, supervisors of principals, and other leaders directly involved with the districts' IFL partnership. All interviews focused on the nature of IFL's district work including the rationale for particular approaches and how participants made sense of how the work was unfolding in real time.

Observations. We reviewed notes from approximately 200 hours of formal meetings that occurred between IFL staff and district practitioners and among IFL staff between 2001 and 2005 (e.g., annual retreats for IFL partner districts, meetings on site with district principals, and IFL staff meetings). We conducted an additional 32 hours of meeting observations between 2005 and 2006. These observations focused on the extent to which IFL activities reflected or departed from the concepts elaborated in our conceptual framework.

Documents/artifacts. We reviewed more than 150 documents that captured the evolution of the IFL's district partnerships over time including multiple versions of IFL-authored descriptions of their work, IFL's tools, records of the IFL's district plans, and artifacts from IFL trainings. We also included reported and unreported descriptive analyses of IFL work written by RAND researchers over the course of their research.

Focus groups. We reviewed transcripts from teacher focus groups that included 118 teachers across three districts. We included in our analysis for this

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article those portions of the focus group conversations that addressed teachers' experiences with IFL staff and activities.

Data Analysis

We used NUD*IST (QSR6) software to code our data in several phases. First, we used low-inference categories to sort through basic dimensions of the IFL's district partnerships including the IFL's intended relationships with districts, instances of the IFL–district relationships in practice, outcomes that seemed associated with these relationships, and conditions that seemed to help or hinder those relationships either by respondents' direct reports or our observations. Second, we recoded our data using higher inference concepts from our conceptual framework including examples of brokering, modeling, providing dialogue-rich social opportunities, tool development, and engagement in joint work. We catalogued as "other" any data that seemed to capture important dimensions of the IFL's district relationships that did not fit obviously into these categories. We also asked IFL respondents and a RAND researcher who led their IFL research to review our draft report carefully and highlight consistencies and inconsistencies with their interpretations of events. We used such respondent reviews as an additional check on construct validity and the overall reliability of our analyses.

We acknowledge that interviews served as a primary source of data for this analysis and that such self-report data can be a poor substitute for extended observations of actual practice. For example, our colleagues noticed that district central office leaders tend to be more positive about the IFL's work than school-level leaders. Our own experience with various implementation studies suggests that respondents may tend to report significant frustrations when engaged in challenging work such as that supported by the IFL and to magnify their difficulties beyond what might be documented by more dispassionate observers over time. We dealt with these potential biases in self-report data by triangulating reports from different types of respondents—school-level staff, district-level staff, and IFL staff. Whenever possible we corroborated self-reports with data from observations and documents. Throughout our report of findings we indicate whether we derived a particular claim from self-report or another data source to help readers judge the bases of our claims.

FINDINGS

Analyzing and interpreting the day-to-day work of an organization with complex goals poses significant challenges. The majority of our data confirm that IFL staff tended to work in partnership with district practitioners in ways consistent with the activities in our conceptual framework. However, we also found examples in

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which IFL staff deviated from those activities intentionally, because of limited internal capacity for engaging in them, or because of other factors. In fact, one of our main findings is that the work of learning-support intermediary organizations is inherently challenging and dependent on the participation and capacity of others well beyond their control. Such work may wax and wane along various dimensions of success over time. Where possible in the upcoming sections, we note significant counterexamples to the predominant patterns. But, given the complexity of these processes, space limitations, and the nascent stage of research in this area, we focus our discussion on elaborating predominant features of the IFL's assistance relationships.

Overall, we found that the IFL–district assistance relationships seemed to involve brokering, modeling, particular social opportunities, and the development and use of tools, all centered on joint work or particular problems of practice identified and elaborated by both IFL staff and district practitioners. We did not find sufficient evidence that the IFL created valued identity structures. In certain modest respects, the IFL's activities also extended beyond those in our conceptual framework. For example, the social opportunities enabled by the IFL–district assistance relationships seemed to reflect those anticipated by theory; however, characteristic of these opportunities also were IFL efforts to lessen the risk district practitioners may have associated with engaging particular new work practices. Across all these activities, we found evidence that the IFL regularly revisited and occasionally revised their approach to engaging in those activities within some foundational parameters as district practitioners' and IFL staff both deepened their engagement in particular work practices and as district conditions shifted. To reflect and reinforce this cross-cutting feature of the relationships, we call them "adaptive assistance relationships." In the following subsections we elaborate these dimensions of the IFL's adaptive assistance relationships with its partner districts.

Brokering

Interviews and observations indicated that all IFL fellows at least occasionally operated in ways consistent with what theory refers to as "brokering"— linking district practitioners to a variety of new ideas (and people with ideas) about how to strengthen student learning. As one IFL staff member elaborated,

> That's [brokering is] . . . true for . . . most of us. You know, you get into these meetings [with district staff] and . . . you become a purveyor of . . . all the ideas that are out there. We work here [at the University of Pittsburgh] in such a way that we hear what others are doing and we know what other districts are doing. So when we're in meetings with these folks we can say, well, you might want to think about this or you might want to go there. But I don't think that's necessarily just a role that I have, I think it's one that probably happens with most of the [fellows].

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Most of the examples of IFL fellows operating as brokers that we surfaced in our data involve IFL fellows linking district practitioners to research on how people learn. By many IFL staff members' accounts, Lauren Resnick and others at the University of Pittsburgh first developed the IFL in the mid 1990s to bridge district leaders involved with the New Standards Project to research on learning that both district practitioners and early IFL staff believed would help them realize their early standards (Glennan & Resnick, 2004; Honig & Ikemoto, 2006). In interviews, virtually all the IFL fellows cited multiple instances in which they consulted various research databases for such resources. For example, one fellow described the following strategies she or he used to prepare for professional development sessions with his or her districts:

> I'll speak for myself, but I know my colleagues do this. When I'm putting together a [professional development] session, I spend a lot of time on the internet, googling different authors or different ideas or like different concepts to see what pops up. . . . At the [annual convening of member districts] . . . our group was doing the . . . professional development. So one of the things that I did was spend about, I don't know, two or three days hanging out here at home on the computer, looking up all kinds of things, in terms of coherent professional development. And out of that surfaced those characteristics that we use, but also out of that surfaced like three or four articles that were right on target for that particular topic and very informative and that now people are using. And that's true for all of us [fellows], you know.

IFL fellows also linked their partner districts to researchers themselves. For example, researchers presented at all of the IFL's annual meetings for its partner districts between 2000 and 2005. In one instance a nationally prominent researcher shared her work on assessment during a 2005 retreat for the IFL district partners. Our observations and document reviews suggested that IFL staff members also linked district practitioners to new ideas from research by engaging researchers in developing materials specifically for the IFL fellows to use in their work with districts. (We elaborate on the process of tool development in the subsection on "tools" next.) For example, during our data collection period, IFL fellows and other staff worked with a school leadership researcher to develop a principal evaluation rubric and to pilot that rubric in one of their districts. Occasionally, the IFL hired researchers as part-time staff to provide ongoing consultation. For instance, in recent years, several researchers have joined an IFL work team to share their research knowledge regarding secondary school content areas. As one IFL staff person confirmed,

> We really do try to bring in researchers . . . to talk to us, to talk to the district people. And we want to be informed not just by reading the articles, but then having them [researchers] look at our materials and say, "Does this fit within the realm of what you believe you mean when you say this?" . . . So when we did a lot of work on [a

> particular set of materials for districts] we brought in researchers who do the research on talk [dialogue that promotes learning]. . . . And it was a marriage between . . . research and practitioners going back and forth about what it means to have talk not only from the research-base, but what we've learned in classrooms.

IFL staff also bridged district practitioners with researchers by inviting researchers to conduct research in their districts. For example, the IFL asked the RAND Corporation to conduct several studies including analyses of the IFL's participation in supporting district reforms in three of its member district (and from which we draw some of the data presented here). At the end of each study, IFL staff invited RAND researchers to share their findings with all IFL staff, and in each instance they devoted almost an entire day to a discussion about the findings and how fellows might use those finding to improve their work with partner districts.

IFL fellows also frequently bridged their partner districts to each other and lessons learned about promising teaching and learning improvement efforts in other districts. For example, our interviews with and observations of district practitioners confirmed that across our focal IFL districts, fellows routinely created opportunities for district central office administrators and school principals to observe practitioners in other districts engaging in Learning Walks—a strategy IFL staff derived from their partnership with then New York City Community School District #2 to help educational leaders and teachers observe, analyze, and improve teachers' practice and supports for that practice (Institute for Learning, 2003). In a comment typical of our data from district practitioners, one district leader explained,

> For me, personally, as a new [district leader], [the IFL partnership] was an excellent way for me to get mentoring and coaching and to really hook into a professional community very quickly, because I don't know that I would have known how to go out and find other[s]—and I couldn't—but I very quickly got in with a group of other [district leaders] in cities with similar kinds of schools, and conditions and situations that [my district] had.

According to some IFL fellows, linking district practitioners to one another was one of their most important bridging activities in part because they believed many practitioners in their particular districts were on the cutting edge of knowledge about how to strengthen teaching and learning districtwide. According to one fellow,

> I think we're learning so much. . . . What some of these successful districts are both taking from our work but also what they're turning them into on their own is very useful because they're ahead of where the research is. . . . So we want to make some case studies and ... give the world some of the examples of what's going on in these districts that would inform the rest of the world.

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Across these and other examples of the IFL's brokering activities, IFL staff did not simply pass new ideas to district practitioners but grappled with where to look for particular knowledge resources, what they were finding, and whether and how to share it with district practitioners in ways consistent with what theorists refer to as "translation". For example, one IFL staff member described her brokering efforts as fundamentally about understanding the meaning of various new information and how to frame it for district practitioners,

> I take notes on the article. I then think to myself how it's useful. I then try to do some—I guess probably what I do research-wise is do some triangulation, look at some other articles by other researchers, ones that I recognize, ones that I know. I might look at those and then I try to see how what one says coordinates with what others say. And then after I do that then I might sort of put it together. I might frame it, put it together. Then I would send it out. In the case of [developing one set of materials], I . . . sent . . . out the copies of the articles [to other fellows. I asked them,] "How does this sound?" So in effect, I used my colleagues to vet the material. . . . Then we might sit and talk about it. Then after that, then start to think about, "Okay, how will we use this?" . . . So then we would go back and forth.

In self-reports of their work between 2001 and 2006, IFL fellows routinely indicated that a key dimension of their work involved consultations with each other about how to translate research resources into forms that might help their district partners integrate the research into their own work practice. As one fellow described this process,

> There's a group of us, probably I guess that practically the majority of us, when we come across something that we think has applicability in other settings or it's some research that we think is really interesting to think about using, we usually share it and, you know, send it out for people to see. And then what usually happens . . . next is that people will say, "That's really good. Did you use it?" And then, of course, you know you say, "Yeah, here's the task sheet." Or, "Here's the protocol." Or, "Here's how I used it and here's how I ramped up to it and then here's what I did with it and then here's what I ask people to do with it."

We also found that IFL staff members' efforts to link district practitioners with specific research communities reflected particular biases. For example, IFL staff appeared to readily link districts to research on adult and student learning and the importance of trust and tools to learning. Interviews and observations suggested that staff tended to favor this research in part because they had personal connections to individual researchers in these areas. When we probed about their engagement with other research that seemed relevant to the IFL's work (including research on implementation, change, and leadership), IFL staff generally reported that they infrequently searched for or used research in those areas. IFL staff's generally

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limited familiarity with this research may have curbed their searches within these research communities for research information that could have grounded their efforts.

A few district leaders suggested in interviews that they picked up on these biases and that they viewed the IFL's relatively weak knowledge of research beyond learning research as a limitation on their brokering roles and work overall. For example, one district leader reported that what he or she perceived as the IFL's narrow focus on instructional leadership resulted in the IFL's principal leadership training leaving out important aspects of school leadership. In this person's words,

> I think it might behoove them to look a little bit more at [research on] the role of the principal and to not let ideology color their view of what a principal should be doing. So I think they need to do a little bit more work on how the principal can work effectively as an instructional leader while having organizational responsibilities.

Modeling

Data across our entire study likewise surfaced multiple examples of IFL fellows using modeling strategies to engage district practitioners in new work practices. For example, during visits to districts, IFL staff routinely modeled or linked district practitioners to others who modeled how to conduct LearningWalks. In one typical instance, an IFL fellow demonstrated how to look for evidence of what they considered high-quality teaching and learning while observing classrooms as part of the IFL's LearningWalk protocol. A central office leader in that district reflected that part of why the IFL has been so helpful with supporting new leadership practice is because IFL fellows have been present on site in his or her district demonstrating these new work practices, observing district practitioners engaging in them, and helping district practitioners make sense of the new work.

Our observations captured multiple instances in which, as part of their modeling efforts, IFL fellows made thinking explicit in ways consistent with the meta-cognitive activities described in our conceptual framework. For example, when asked to identify what she considered the most important features of her work with district practitioners, one fellow highlighted, "The idea of making thinking visible . . . the meta-level of stepping back and reflecting on what supported your learning, and what the implications of that are for what you're going to do when you try to support someone else's learning."

All the IFL fellows interviewed not only led professional development sessions but, in the course of the sessions, they regularly and explicitly labeled strategies they were using. For example, in one session with district staff that we observed, the IFL fellow serving as facilitator led participants through establishing norms to guide their conversation as a group. She also explained to participants that

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she was trying to help them establish such norms with the hope that doing so would facilitate the kinds of direct, honest, and sometimes difficult dialogue that reflecting on professional practice required. When asked in an interview to explain the rationale for this approach to her dialogue with district practitioners, she explained that she frequently reflected her strategies for running meetings back to participating school principals and central office administrators. She thought that such a meta-cognitive strategy would help principals identify these strategies and would increase the likelihood that they would use similar strategies in their work with their own staff in other settings than if she simply demonstrated the activities without making her thinking explicit.

We also found some evidence that reciprocity characterized the IFL's modeling. As one IFL staff person explained, through their relationships with districts they too interrogated and deepened their own participation in particular work practices,

> [We were] . . . asking them to read the [research] articles, to think about what's going on in the school, and then it was their questions and their comments back that made us kind of tweak and refine the list [of characteristics of high quality professional development] that we ended up with. So it was actually watching it play out in schools and what's possible and what's not possible, what really makes sense to teachers and what makes sense to principals. So I got as much from it [the relationship] as probably they got out of it. . . . That's the two-wayness.

Another IFL fellow corroborated, "We learn from the people we work with everyday."

IFL staff also solicited feedback from their partner districts during and after all of the formal IFL-district meetings observed in our period of study. Distributing feedback forms at meetings is not a particularly unusual, uncommon, or necessarily significant activity. However, the IFL's feedback efforts seemed to indicate reciprocity in their relationships because IFL staff routinely used the feedback to interrogate their own participation in the assistance relationships and how they might improve on it. According to one IFL fellow, the IFL's use of feedback reflected how they relied on their relationships with practitioners to help them enhance their own work:

> I think that we all really rely on the feedback forms—the field, the coaches, who are trying to use our ideas and our materials and tools . . . —to keep us honest and make them [our sessions] really useful. So, I would say . . . we definitely rely on the practitioners, the practition of coaches and coach coordinators that we work with.

The reciprocal nature of these relationships seemed fundamental to district practitioners' willingness to participate in these relationships over time in ways that seemed to matter to deepening their engagement in particular work practices.

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As one district central office administrator said in reflecting over a -six year partnership with the IFL,

> I think some of things [this district] has done with [the IFL] has shown up in their [the IFL's] work. I know our literacy coaches will point out that certain things the IFL now says are based upon their experiences within the district, or . . . a push-back they got from the district. . . . The IFL tries to tailor—tries to make some accommodation to what the system already does, or they may even rethink . . . some of the truths that they held based upon what they see happening. We see it as more of a dynamic body of knowledge that, yes, they present knowledge to us in a structured form that we may not have thought about, but they also are willing to adjust that to the on-the-ground reality sometimes.

Our data also supported the importance of particular forms of modeling to district improvement efforts by negative example. In two districts, central office administrators in particular reported that the IFL had a limited impact on their formal policies and how they participated in teaching and learning improvements. These central office administrators tended to describe the IFL's work in their districts as overly theoretical and lacking concrete forms of support. Some individuals talked about wanting the IFL to "connect the dots"—provide more concrete examples and direct follow-up with IFL fellows. For example, one of these central office administrators reported,

> The only thing I guess I would like more of is . . . how to get things accomplished. I think lots of times the Institute, and that's probably the way it's designed . . . gives the questions, facilitates discussion, but doesn't really give you the answers. Sometimes you'd just like to have more answers or more best practices from this other district, more real examples of how to make things happen, rather than just discussions.

Social Opportunities

As part of their assistance relationships, IFL staff engaged district practitioners in a countless number of formal and informal dialogue-rich social processes. The extent of the formal social processes seemed to vary by the IFL's contract with partner districts—specifically the number of on-site technical assistance days they had negotiated with each district and accordingly how many opportunities they had to convene groups of district practitioners in meetings. Regardless of the specific contractual terms, IFL fellows typically held monthly day-long professional development sessions for particular stakeholder groups within each district, such as central office administrators, principals, and/or school coaches. Some conferences or professional meetings may be characterized by formal presentations or the transmission of information to attendees. By contrast, the IFL's day-long

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professional development sessions fundamentally involved dialogue among district practitioners, as well as between district practitioners and staff. For example, our reviews of formal meeting agendas suggested that significant portions of these meetings were dedicated to analyzing research articles in small groups, examining and discussing videos of classroom instruction, and sharing their reflections on how the new information related to their own professional practice.

IFL fellows typically deliberately structured such dialogue to provide district practitioners with opportunities to socially construct the relevance of particular ideas or forms of work practice to their own ongoing practice. As one district leader explained, these opportunities to grapple with the meaning of new ideas in light of their own practice had a much greater impact on his or her practice than exposure to the same ideas absent opportunities for social construction:

> In my work in graduate school, I had some experience with WalkThroughs, which is the early iteration of LearningWalks. And I'd had my requisite courses in psychology of learning and all that stuff, but I hadn't really had the opportunity to practice it. So I've learned enormously from the work [with the IFL].

This district leader elaborated that "the opportunity to practice it" included written and oral guiding questions from IFL staff that engaged him or her and his or her colleagues in making sense of why to conduct a LearningWalk, what were the basic parameters of this activity, and how this leader might execute it in his or her own context. Another district leader corroborated that a key dimension of their relationship with the IFL involved IFL fellows assisting them in making sense of the implications of new ideas for their ongoing practice,

> [The IFL has been] helping us to translate that [research] into good practice and then really applying it to our own situation. So translating the research to practice across the country and then adapting it to our own situation, I think, was the perfect flow.

Another district leader reported in an interview that the IFL routinely carved out significant portions of their meetings for him or her and his or her staff to learn about new ideas and to jointly discuss how new ideas mattered to their work. This leader reported that these opportunities were a fundamental aspect of his or her work with the IFL and essential to the work permeating ongoing professional practice.

> I think that there's a tremendous need for the work to become personalized for a district and very connected with the work that the district is doing in order for it to be meaningful so that it doesn't become a layer. When it's visualized as just a layer and not embedded in the work that you're doing, then it doesn't have meaning anymore.

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These social opportunities also seemed to challenge district practitioners' beliefs and prior knowledge about how to support teaching and learning districtwide. For example, a longtime IFL staff member commented that she had observed IFL staff frequently talk about the importance of creating "a sense of disequilibrium" among the practitioners participating in IFL sessions. One fellow went so far as to report that she viewed her work as a failure if she did not create that sense of disequilibrium. She explained that such instances are

> when people are really learning something. . . . [As one fellow talks about it] The way that she knows that that's going to happen is when she gets somebody saying, "Oh my God, wait a minute. I never realized that I was doing this," or, "I didn't realize I wasn't doing this." And so she's come up with ways to get people to reach that point of disequilibrium. Sometimes it's a lesson that will challenge them to think about something that is uncomfortable for them or that stretches them a little. Or she'll have them make videos of their own practice and bring them in. And [she's] not the only one who does this, by the way. This is something that all of the [IFL teams] do [with practitioners].

In interviews, district practitioners too characterized their discussions with IFL fellows as challenging their thinking. As one district leader put it, "The system has never been ready to do any of the things they want us to do, so it's a constant push. They're a pushy partner, which is exactly what the system needs."

Our observational data, in particular, suggested that the IFL staff worked to construct these social opportunities in ways that limited (or that they intended to limit) risks district practitioners may have associated with examining and critiquing their own practice. For example, as previously noted, our reviews of meeting materials from more than 30 IFL professional development sessions revealed that IFL staff often invariably kicked these meetings off with a discussion of norms (often referred to in meetings as norms of "successful professional learning communities") that the group would use to guide their work in and beyond the session. To reinforce these norms, the IFL fellows that led these conversations often modeled what they called "talk moves"—how to disagree with another speaker in a respectful manner. Observation notes also indicated that IFL staff created norms of safety around specific tasks. For example, in one instance when school principals were observing a video of a guided reading lesson in one classroom, observers recorded multiple instances in which the fellows explicitly discouraged participants from evaluating the teacher and instead focused their attention on the extent to which the video included evidence of powerful teaching and learning.

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Developing and Supporting the Use of Tools

The IFL also devoted significant staff and fiscal resources toward the development of tools that they used to ground their district assistance relationships. (For an elaborated analysis of the IFL's efforts to develop and support the use of tools; see Ikemoto & Honig, in press.) Consistent with theory, IFL staff in interviews distinguished tools from other materials in that tools carried ideas they believed practitioners would value and use and in that they usually promoted particular activities to engage district practitioners in those ideas. For example, when asked to explain what makes a particular IFL document or set of materials a tool, one IFL staff person explained,

> The tool has to carry the theory as well as the action because you just can't tell people to have an invested learning community; you have to put them in one. And . . . that was based on some research on tools, on what we do to develop good tools. . . . We had to build the tools that produced the action rather than tell people to have the action.

According to another, "a tool should make people not so much believe in [the importance of a given activity] but it should actualize it. . . . Then they can step back and say, "Oh that's what you meant by it." So in the tool's very essence of being used, it should make a person live out [particular activities]."

The tools that IFL staff created during our period of study could be classified as either primarily conceptual or practical. Conceptual tools were mainly text-based statements designed mainly to present particular ideas. For example, the "Principles of Learning" were essentially nine statements about the characteristics of environments that promote rigorous instruction. Practical tools had conceptual dimensions but emphasized action rather than ideas as the main avenue for helping district practitioners incorporate particular ideas into their practice. For example, the LearningWalk tool rested on a set of ideas about how to engage teachers in critical examination of their own practice but took the form of a series of guided activities for principals and others to use to foster such examination.

IFL staff developed two different kinds of conceptual and practical tools. One type, that we labeled "local tools," included situation-specific tools usually created by individual fellows to address a particular challenge within a given district. For example, in one district the IFL–district partnership focused in part on strengthening principals' support for reading instruction. Several fellows working in that district developed a tool that engaged school principals in research on the role of fluency in learning to read and then examined the extent to which ideas from this research were reflected in their own local state standards and district literacy curriculum. Other tools, that we called "organizational" tools, were developed for use in multiple districts. For example, fellows and full-time staff across the IFL

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contributed to the development of the LearningWalk tool, and IFL fellows reported that they had used this tool in almost all of their partner districts as one resource for shaping district practitioners' work practice. In some instances, IFL fellows over time developed particular local tools into organizational tools. For example, several fellows created a number of practical tools for engaging principals in the Principles of Learning. Although these fellows consulted with one another, they largely crafted the activities for the specific context and purpose of their assigned districts. These fellows later came together to create an organizational Instructional Leadership Program tool that integrated their local work into a resource for use across IFL districts.

A recurrent theme in our data was that the IFL drew on particular resources as the basis for the development of all their organizational tools and most of their local tools—namely, ideas from both research and their own as well as their district partners' experience. This use of both research and practice knowledge seemed a particular hallmark of the IFL's approach to tool development and, by some self-reports and our own observations, essential to district practitioners' sustained use of certain tools over time. For example, early IFL staff began developing the Principles of Learning by reviewing certain research on how people learn and then distilling that research into selected key dimensions of powerful teaching and learning environments. However, the Principals of Learning now in use at the IFL developed over the course of at least four years through formal and informal conversations with a core group of educators and IFL staff during which IFL staff and district practitioners grappled with the value of particular research-based ideas and how to word particular complex concepts in ways that might resonate with practitioners (Resnick, Hall, & Fellows of the Institute for Learning, 2001). Other tools such as the LearningWalk began with practice of district central office administrators and school principals—in this case, those in New York City Community School District #2. In the early 1990s, then superintendent Tony Alvarado began supporting his staff in observing each others' practice and engaging in challenging conversations around their observations and student work. District and IFL leaders observed that these activities seemed to be having a demonstrable impact on teachers' and principals' work practice and that the activities, albeit unintentionally, reflected research on how people learn. Over a series of years, with the help of researchers from the Learning Research Development Center, which housed the IFL at the University of Pittsburgh, IFL created the LearningWalk tool that incorporated lessons from District #2 practice, as well as research on how people learn, and eventually other research on professional consultations and trust.

The development of tools alone did not ensure their use in productive ways. Our data surfaced various instances of IFL fellows expressing concern that district practitioners occasionally misappropriated their tools. For example, one fellow explained how the IFL had attempted to make one of the Principles of Learning,

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Clear Expectations, concrete and practical for practitioners by encouraging administrators to look for whether teachers were posting objectives and scoring rubrics on classroom walls during their LearningWalks. However, principals in several districts used this LearningWalk protocol as a checklist in ways that emphasized the superficial features of Clear Expectations and failed to reflect the underlying idea that teachers should be making sure that their students were developing solid understandings of what they were expected to know and be able to do. Some IFL fellows, therefore, feared that practical tools might undermine the value of the ideas that the IFL was attempting to support. As we elaborate in another report of the IFL's work, the provision of the other forms of assistance, including modeling and social opportunities, seemed to significantly mitigate against misappropriation of tools (Ikemoto & Honig, in press).

Focusing on Engagement in Joint Work

We found countless examples of IFL–district relationships focused on specific problems of practice, or what theory refers to as joint work. In some instances, the joint work involved challenges districts faced in improving teaching and learning. For example, one IFL–district partnership centered on how to improve the then disappointing implementation of a particular literacy initiative that the district had chosen to institute districtwide. Joint work also included district exemplars. The "work" in the latter cases became how to understand the conditions under which particular district activities seemed to promote positive results and how to use lessons learned from those exemplars to inform research and practice. For example, IFL staff reported that in the late 1990s they noticed that Tony Alvarado, superintendent in New York City Community School District #2, seemed to support teaching and learning successfully in part by reshaping the relationship between the school district central office and school principals. In the latter case, the joint work for the IFL, District #2 leaders, and Learning Research Development Center researchers became to uncover which activities and conditions seemed to contribute to the apparently positive results.

District practitioners typically prompted the forms of joint work that grounded the IFL–district assistance relationships, but the joint work generally took shape through ongoing deliberations between IFL staff and district practitioners as both parties grappled with the root causes of particular district challenges and how they could be addressed through the IFL–district partnership. For example, we observed two annual IFL staff meetings (in June 2003 and June 2004) in which

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Teachers set Clear Expectations when they provide "clear standards of achievement and measures of students' progress toward those standards that offer real incentives for students to work hard and succeed. Descriptive criteria and models that meet the standards are displayed in the schools, and the students refer to these displays to help them analyze and discuss their work" (Resnick et al., 2001).

IFL fellows described individual district work plans and how they were developed. According to the fellows' reports, the vast majority of the work plans came together through ongoing conversations between IFL staff and district practitioners:

> In each district [how we work is] slightly different because . . . as you can tell by the resident fellows development of plans, it is the plans that we develop with the district that we're essentially responsible for delivering. . . . So it is co-constructed. I mean we clearly have in that construction an idea of what we think it is a district has to do that year to get someplace, but we also have to hear from them and have them agree that that's where they want to go. One of the things I think we do that's slightly different than most vendors . . . is that we customize. We are really attentive to the specific needs, realities, and circumstances of the districts we're in. And we're accommodating to . . . where they are and where they have to go. I mean, we differentiate the needs of our work in terms of districts as well as within the districts.

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However, our analysis suggests that the extent of the co-construction of joint work may have been uneven during our study period. For example, some IFL fellows reported in interviews that district practitioners occasionally appeared reluctant to participate in the co-construction process—sometimes going so far as to call on the IFL to step into a situation and direct their work—and that the IFL–district plans developed under such circumstances reflected more of the IFL's ideas than district or joint ideas.

Some IFL staff expressed concerns that district practitioners occasionally demanded a didactic approach to help with their learning improvement efforts but that such direct guidance threatened to undermine opportunities for practitioners to grapple with ideas in ways that promised to deepen their understanding of those ideas. IFL staff generally reported that they managed this dilemma by "telling" practitioners explicitly how they should use ideas from IFL trainings early in their partnership and gradually lessening their reliance on this approach over time so that practitioners would take more responsibility for determining whether and how to apply knowledge to their practice. Accordingly, we view such early periods of direction as points on a trajectory of assistance toward joint work—strategies to help district practitioners engage in the co-construction of joint work over time. One district practitioner supported this interpretation that such directive periods were occasionally necessary to enable their deeper engagement in IFL activities over time:

> I think in the beginning they showed up and said, "Here are the Principles of Learning. Here's a LearningWalk. Here's how to do it." But now it's not that way anymore. I mean, that's because we didn't know anything. We needed that [in the beginning].

Another district practitioner corroborated.

> In the beginning . . . it was the IFL who would tell us, "This is what needs doing and we're going to come and this is what we're giving you." . . . And it's almost like we've turned around [a corner on these mainly directive relationships] and said, "No, no, no, wait a minute. We know what you do. We know what you have." And now we're stopping and [*we're*] saying, "These are the pieces that we still need in our district." . . . They've just enabled us to come almost full circle, so I think we've grown as partners.

In other districts, excessive work demands may have truncated negotiations around joint work. For example, IFL staff reported in interviews especially in the last several years of our data collection that district practitioners presented them with more forms of joint work than they could realistically engage. These excessive work demands were so visible that even some district leaders reported to us that they would have liked to have involved the IFL in more aspects of their districtwide reform efforts but that the IFL staff seemed spread too thin to take on more responsibilities.

Although IFL staff reportedly wanted to jointly co-construct the work with each district, it also did not want—as one staff member put it—to "reinvent the wheel" in every district. Perhaps as a result, overtime, the IFL also tended to favor forms of joint work that seemed to fit well with tools they already had developed. For example, in the three districts from which we had particularly intensive interview data over time—and which were three of the IFL's longest standing partnerships—the formal agreement about IFL–district assistance relationships emphasized four strategic areas: instructional leadership, coaching, curriculum specification, and the use of data in decision making. However, in practice, IFL staff spent most of their time and other resources on one of these areas, instructional leadership—specifically in working with district leaders to support principals in shifting from mainly managerial to primarily instructional support roles. At the time, the IFL had spent particularly significant resources on the development of their expertise in instructional leadership (including hiring staff with extensive experience in this area; see also, Marsh et al., 2005).

Adaptive Assistance

We found substantial evidence that within the broad categories of activity previously elaborated, IFL staff often revisited, elaborated, and revised how they engaged in those activities over time as district and IFL capacity for particular work practices deepened, as other local conditions shifted (e.g., changes in district priorities), and as IFL staff deepened their understanding of different ways to realize those activities in their particular district contexts. In the words of one

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IFL fellow, "we are continually changing how we do business." This pattern was so prominent that we call the IFL–district assistance relationships "adaptive assistance" to capture this cross-cutting dynamic of their work with districts.

Several learning theorists have elaborated the notion of adaptation with regard to expertise (Hatano & Inagaki, 1986; Schwartz, Bransford, & Sears, 2005).[2] Like adaptive expertise, adaptive assistance involves activities—in this case, those previously elaborated—that participants engage in deeply but also break out of within certain parameters depending on dimensions of their situation such as district practitioners' starting capacity. When assistance is adaptive, participants in those assistance relationships do not simply replicate behaviors of the past but continually assess their situations (especially the extent to which those situations are routine or nonroutine); take action; and revisit the fit between their goals, actions, and outcomes.

Virtually all IFL staff reinforced adaptive assistance as the overarching orientation to their district assistance relationships. In the words of one IFL staff person, "[our] best work is done when these lessons [about local constraints on their work] are heated and then our work is adapted to try to assist the district and support the people there to deal with or modify those constraints." IFL fellows and other staff typically described the IFL as an "R&D" or research and development organization that aimed to support its staff in continually interrogating what they were learning, translating those lessons and other evidence into resources for districts, testing those resources in particular circumstances, and reinforcing or revising what they do.

Principals and central office administrators in our focal districts highlighted that IFL staff's "responsiveness" and efforts "to tailor" their work to the specific interests and needs of districts helped them and others in their districts to sustain and deepen their engagement in the partnerships over time. For example, one central office administrator highlighted,

> Well I would say that, as our capacity within the district has grown, it has gone more back and forth. Initially, it was primarily delivered from the IFL to us. But that's part of why we went to them because they have that knowledge base. And as we started to grow— . . . I've seen evidence of IFL really adapting the work based on what they're seeing on our end. And not just what they're seeing, but some people—like I'm very vocal about what I want and don't want or what I think works and doesn't work. And I think if they weren't responsive to that and respectful of that, the relationship wouldn't continue. It doesn't mean they do everything that I ask. They do what they do with reason then we have a healthy dialogue about why something should be one way or the other. And that's not just me. They have it with our curriculum supervisors, with our coaches, with our principals.

[2]Other learning theorists call this kind of engagement double-loop learning (e.g., Argyris, 1976; Argyris & Schon, 1996) or trial-and-error learning (Levitt & March, 1988).

Another corroborated that their interactions with the IFL suggest their orientation toward continually revisiting and revising how they work with districts

> if they didn't evolve, and I am talking about evolving, changing the way they think, I mean, that's what education is all about. It's the way—we need to change. I mean, if you have a child in front of you who's not getting it the way you're teaching it this way, then [you've] got to do it another way. And then you've got to try something else. And not that I'm saying that it wasn't working that way, but you can't do same old same old all the time, especially while people don't listen to same old, same old. . . . It's wonderful. [IFL staff] try—they do listen to feedback and they do try new things.

Our observations and document reviews suggested that tool development, in particular, reflected these characteristics of adaptive assistance. We found multiple instances of IFL staff continuing to refine tools as they applied them in new situations and collected new information about how the tool played out in practice in those situations. The IFL labeled various versions of its tools (e.g., Learning Walk Version 2.1) to mark this evolution and to institutionalize the regular practice of revising tools.

For example, by the end of our data collection, the Principals of Learning (POL) had evolved over a series of years into what some IFL staff had come to call a "suite" of tools. The suite included CD-ROMs containing an e-book with written explanations of the POLs, examples of student work, video clips of classroom practice that reflected the principles, and other materials designed to engage district practitioners in thinking about how the POLs related to their own practice. As one IFL fellow explained,

> Over time, one of the things we wanted people to be able to see is the Principles of Learning living in a classroom; but then as we learned more about talk and content, we realized you can't really do a LearningWalk without knowing something about the content that you're looking at. So the LearningWalk had to change to reflect the fact that . . . you can't look at rigor absent the content of the subject matter. So the research on that informed how we had to think about the LearningWalk. And then actually . . . we also realized that we had to look at the research on trust . . . in order to have people feel that the LearningWalk is something that they were willing to be involved in, so we had to look at [Anthony] Bryk's work on trust. So over the course of time as we did the LearningWalk and realized there were pieces missing, we'd go back to research and think what parts of this are we not doing well enough that causes the kind of problems that the LearningWalk has? So are we being reflective on why this wasn't working, and what other pieces do we need to do.

Various comments from IFL fellows suggested that such adaptive assistance was typical of work across IFL staff. For example, one IFL staff person reported

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how its Disciplinary Literacy Team (one of its development teams) members adapted general ideas about coaching to coaching in specific discipline areas (such as math, science, English language arts, and social studies):

> So [in developing one set of tools] there was a time where we [the Disciplinary Literacy team] kind of put our heads together and we created a general session that they would engage in. . . . And then the team—every one of us would go off and put [the materials] into our [discipline-specific] work and we shared how we were going to do that. And then the team came back together again. . . . So we can really come out with—okay, what are we calling our coaching model because we can't each have our own definitions [of coaching for each discipline]; something has to tie us together as an organization.

IFL fellows also experienced a tension in engaging in adaptive assistance especially in the context of tool development: whether to keep a tool or another dimension of their work the same or revise it in light of new ideas. For example, some stability in their tools seemed essential especially in light of the significant length of time it could take a critical mass of district practitioners across a district to engage in any single iteration of a tool. However, engaging district practitioners in outdated versions of tools threatened the potential impact of their work. Accordingly, adaptive assistance in the context of tool development and ongoing tool use seemed to depend on IFL staff continually revising their tools but also maintaining some stability in their tools. This tension seemed most pronounced as IFL staff grappled with whether one district's experience with a tool should be generalized to others and used to remake a given tool or whether their experience was idiosyncratic or local.

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

In this article we draw on five years of data on the IFL's work with eight districts to build knowledge about learning-support intermediary organizations. The IFL offered an important case for this inquiry in part because past research associated the IFL with such outcomes as changing district central office administrators' and school principals' thinking and work practices in ways that seemed to enable the implementation of learning improvement efforts. However, this research did not elaborate what specifically about the IFL's work with districts might account for such improvements. We found that concepts from sociocultural learning theory helped capture main dimensions of the IFL–district assistance relationships that practitioner reports and observational data associated with such outcomes and that sociocultural learning theory suggests contribute to changes in work practice. These dimensions include brokering, modeling, the provision of certain social

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opportunities, tool development, and engagement in joint work. We did not find evidence that the IFL staff created and valued identity structures as part of their assistance relationships. They did, however, deliberately structure activities with district practitioners in ways that promised to limit risks practitioners' may have associated with exploring new work practices. They also took a particular approach to tool development that involved integrating knowledge from both research and practice into tools over time. We argue that the IFL continually revisited how it engaged in these activities, especially tool development, in ways that seemed fundamental to their approach to their work. Accordingly, we characterize their assistance relationships as adaptive assistance. We focus here on what the IFL's work involved when it reflected these activities at a high level. But some dimensions of their work such as engagement in joint work seemed uneven over time.

This research has a number of implications for district leaders and other policymakers. For one, the case of the IFL suggests that learning-support intermediaries may be important for helping achieve their learning-support goals and that they provide such support by engaging in district. assistance relationships with particular features. By their own and other accounts, the IFL has not been a purveyor of a particular reform approach or focused only on schools like some external support organizations who operate like vendors or school coaches. Rather IFL staff members have tried to position themselves between central offices and schools as a responsive, engaged district partner with the capacity to bring a range of resources to bear on district-specific challenges and priorities for both school- and central office-level staff. Our conceptual framework, derived from studies of learning across multiple settings over time, suggests that such multilevel, situated supports are associated with deepening people's engagement in various challenging work practices. District leaders and other policymakers might examine whether they have access to external partners with the capacity to engage in the kinds of adaptive assistance relationships described here and whether such partnerships would enhance their own work.

District and other educational leaders might also consider that maintaining and growing intermediary organizations capable of the assistance relationships described here may demand that they make substantial investments in intermediary organizations over time. The IFL received seed funding from the University of Pittsburgh, ongoing support from foundations, and a demand for their services that generated a steady revenue source from districts. Other school reform support organizations may not have ready access to resources that would enable them to operate in ways that resemble the activities described here. Public and private funders in particular might examine how they can create funding opportunities for intermediary organizations to engage in multiyear, district-responsive relationships. Such grant making may require some funders to significantly reform their grant-making strategies—especially funders that traditionally have invested in the delivery of specific programs for discrete periods rather than in enabling dynamic,

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locally responsive relationships between intermediary organizations and districts over time. Similarly, school districts might consider how they can procure funding for adaptive-assistance partnerships. Such investments may be a particularly hard sell for some school boards whose contracting and accountability mechanisms favor targeted technical assistance—in particular, predetermined areas, not adaptive assistance relationships.

For other external learning-support organizations, the IFL case provides one model for how they might go about the work of supporting districtwide learning improvement efforts. The IFL example is one of an intermediary organization—one that trains its efforts on shifting work practices within both central offices *and* schools and one that serves as a bridge between central offices and schools in the process. Our study reveals specific activities in which the IFL engaged in these in-between spaces. Although various organizations claim to develop so-called tools to support district improvements, the IFL's approach to integrating knowledge from research and practice into their tools, and to growing their tools over time, seemed to result in a particularly powerful set of resources for districts. Other organizations might consider whether their work might be improved by engagement in these types of activities. In the process, members of other learning-support organizations—and IFL staff, too—might consider whether the ways the IFL case deviated from theory might point to potential liabilities that practitioners should address in their future work. For example, would the work of the IFL and other organizations be enhanced if it included the development of identity structures for practitioners? Would these organizations provide stronger supports for districts if they bridged to research not only on how people learn but on leadership, implementation, change, and other areas that the IFL typically did not engage?

Our work also raises a number of questions for future research. For one, although we examined eight district partnerships over five years, our study is still an examination of one intermediary organization. Do the findings in the IFL case bear out in the context of other intermediary organizations? Additional confirming or disconfirming cases would greatly deepen the theoretical and empirical base about intermediary organizations and learning improvement.

In the process of pursing other cases—including perhaps the IFL's relationships with other districts—researchers might focus their data collection specifically on elaborating the concept of adaptive assistance. As previously noted, such forms of participation come with fundamental tensions such as how to manage competing demands to direct and co-construct work. Also, as previously noted and elaborated elsewhere, IFL fellows grappled with whether particular forms of practitioners' engagement with a tool such as the LearningWalk protocol constituted appropriate or inappropriate use of that tool. Further research on "adaptive expertise" might seek to clarify how participants in these assistance relationships manage these tensions. Researchers might also consider how an observer of, or participant in,

these relationships might gage when a given action reflects adaptive behavior (i.e., a variation within an appropriate range of behavior) versus maladaptive participation.

Future research might also aim to capture dynamics of intermediary work over time. As we previously noted, given the nascent stage of research in this area, we examined the extent to which IFL work frequently resembled features of assistance relationships described in our conceptual framework. However, such developmental and challenging work likely waxes and wanes over time as all participants in the relationships build their capacity for deeper engagement in particular endeavors. For example, in the early stages of the IFL's relationship with some districts, their activities departed distinctly from the reciprocal, nondirective nature of their relationships Elaborating how such relationships change—or what sociocultural learning theorists might refer to as the trajectory of intermediary work—seems important to deepening knowledge about what these organizations are and what they do. What is the trajectory of this kind of work and how do such trajectories vary by district and intermediary starting capacity among other conditions? How can other cases and alternative research designs capture these intermediary dynamics?

The findings presented here, as well as our broader analysis of IFL–district partnerships (Honig & Ikemoto, 2006), suggest that particular conditions help and hinder intermediary work. For example, the IFL's fiscal resources seemed to provide foundational supports. As we suggest here but elaborate elsewhere, all IFL fellows interviewed for this study bring to their work significant knowledge resources, as well as experiences in district practice and in using research that enabled them to engage in challenging work with various practitioners over time. Conditions within districts such as accountability pressures may help or hinder intermediary-district partnerships, depending on how participants manage those pressures. Researchers would develop a fuller picture of what intermediary organizations do and how they do it if they elaborated the multiple contexts in which intermediary organizations operate and how features of those contexts mediate the work.

Ultimately, future research should probe whether and how specific activities of intermediary organizations contribute to learning improvements. We identified IFL activities associated with changes in district policy and how central office administrators and school principals thought about and engaged in their work. But to what extent do these changes in leadership practice translate into expanded learning opportunities and outcomes for students? Especially because intermediary work unfolds in between schools and central offices, and because it is highly contingent on the capacity and practices of others, linking intermediary activities with such outcomes will require significant conceptual development.

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