

Networking for Teacher Learning: Toward a Theory of Effective Design

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This article focuses on one theory of school reform that seeks to counteract insularity among teachers with respect to questions of what to teach and how. It networks teachers across schools and gives them access to outside expertise in their content areas. In this approach teacher learning happens within a series of face-to-face and virtual meetings, sometimes over many years. In this article, we focus on teacher networking and, more specifically, on how teacher networks design for teacher learning. By describing several dynamic tensions inherent in the designs of a sample of teacher networks, and by raising questions about these tensions and their relation to teacher learning, we hope to contribute toward the building of a theory of effective network design. We illustrate these design concepts with references to the work of seven networks that aim to revamp teachers' knowledge in the humanities. In the final section of the article, we offer several sets of questions that derive from our analysis and that might form the basis for further research.

One theory of school reform prominent in the United States today emphasizes the role of teachers. This theory presumes that improvements in the learning of American children depend ultimately on improvements in the learning of their teachers.

Those who espouse this theory may approach the practice of reform in different ways, with approaches occasionally overlapping. Some call for and initiate changes in preprofessional teacher education (Darling-Hammond, Wise, & Klein, 1995; Kennedy, 1999), whereas others design on-the-job teacher education—for example, by district staff developers (Elmore & Burney, 1999) or by contracted school design teams (Berends, Bodilly, & Kirby, 2002). Some focus on restructuring and reculturing teachers' work environments, aiming to develop collaborative communities of practice within schools (Bryk & Schneider, 2002; Little, 1999; Louis, Kruse, & Marks, 1996; McLaughlin & Talbert, 2001). And others seek to counteract insularity among teachers with respect to questions of what to teach and how. They network teachers across schools, offering them access to outside expertise, particularly in their content areas (Lieberman & Grolnick, 1996;

Pennell & Firestone, 1996, 1998). In this latter approach, teacher learning happens within a series of face-to-face and virtual meetings, sometimes over many years.

In this article, we focus on teacher networking and more specifically on how teacher networks design for teacher learning. By describing several dynamic tensions inherent in the designs of a sample of teacher networks, and by raising questions about these tensions and their relation to teacher learning, we hope to contribute toward the building of a theory of effective network design.

Our work was commissioned by the Woodrow Wilson Foundation as part of a larger inquiry into subject-focused teacher learning, one stimulated in part by recent research suggesting the crucial role it may play in school reform (Ball & Cohen, 1999; Cohen & Hill, 2001; Kennedy, 1998). The foundation asked us to conduct a comparative study of the theories of action of teacher networks in the humanities. Our task was to elicit design principles from a sample of such networks and to parse these principles. We aimed to build on the work of Lieberman and Grolnick (1996), who studied design issues facing a wide array of reform networks in the early 1990s, though we limited our sample of networks to those explicitly focused on developing their members' content knowledge and pedagogical content knowledge.¹

Following Shulman (1987), we defined content knowledge as knowledge involving core conceptual understanding, facility with certain tools and discourses, and a metacognitive sense of field. And we defined pedagogical content knowledge as knowledge of the ways in which students typically develop their own understanding of content and knowledge of how to help them do so. Thus pedagogical content knowledge in the humanities includes knowledge of how to help a group of students delve below the surface of a literary text, knowledge of how to organize students to undertake their own historical inquiry, and knowledge of how to help students gain an artistic sensibility.

We designed our sample to include networks with both national and regional compass and with a variety of subject foci. To assess their theories of action, we relied on network-published documents and Web sites, supplementing these with secondary sources, fact-checking interviews of network staff, and (in most cases) our own experiences in the networks as participants or participant-observers.

We conducted our comparative analysis with the findings in mind of a small but growing literature on teacher networking (Adams, 2000; Lieberman & Grolnick, 1996; Lieberman & McLaughlin, 1992; Lieberman & Miller, 1999; Lieberman & Wood, 2001, 2003; Pennell & Firestone, 1996, 1998; Useem, Buchanan, Meyers, & Maule-Schmidt, 1995). It suggests a number of functions that networks can play to advance serious school

reform—among them, several that are especially germane to our analysis. These functions include the following:

- Developing teachers' content knowledge important to reform
- Enhancing teachers' pedagogical content knowledge in ways that accommodate reform
- Providing teachers access to content-focused expertise otherwise not available to them and scaffolding the emergence of new practice with respect to content
- Providing sustained professional development to teachers such that new content-focused practice may have time to emerge and become established
- Creating a common discourse and norms for the development and maintenance of a community of practice within and across schools, one tuned to larger perspectives on content and the teaching of it
- Enhancing members' sense of teacher efficacy even in the face of predictable difficulties in implementing content-focused reform
- Providing leadership opportunities for teachers whereby their sense of the complexities of reform in practice may affect the development of policies within and beyond school, particularly policies affecting what gets taught and how

THE ANALYSIS

We analyzed seven networks: Foxfire, Humanitas, the Bread Loaf Rural Teacher Network, the American Social History Project, the Empire State Partnerships, Facing History and Ourselves, and the National Writing Project. We analyzed these networks in terms of their espoused theory and design theory—that is, what they say they do and how they organize themselves to do what they say (Schon & McDonald, 1998). We did not study what they actually do, how their members experience what they do, or what results appear to be in terms of the members' own learning and that of their students. Some studies of this kind do exist, including ones that focused on some of the networks in our sample—for example, Lieberman and Wood (2003), Lowenstein (2003), Fancsali, Nelsestuen, and Weinbaum (2002), and Pennell and Firestone (1996). However, more are needed. This is one kind of study that we hope our analysis will benefit.

Besides their orientation to the humanities and to the development of their members' content and pedagogical content knowledge, these seven networks have much in common. For example, they all initiate new

members through a summer experience. In most cases, the summer experience involves what might be called professional risk taking—for example, speaking about personal experiences related to the subject at hand, sharing favorite lesson plans, creating new plans and opening them to peer critique, or sharing one's own students' work. A recent study of the National Writing Project suggests that controlled risk taking prepares network initiates to examine and displace some of their deepest beliefs and practices concerning both content and pedagogy (McDonald, Buchanan, & Sterling, in press).

Beyond their summer initiation, participants in all these networks are invited to continue their development as network members through periodic workshops or meetings, online discussions, and sometimes in-school coaching. Many participants are also encouraged to present their work in newsletters, curriculum guides, or other network vehicles; and some are invited to serve as mentors, workshop leaders, or consultants to the rest of the network.

The networks we analyzed also vary. The most obvious variation concerns their subject focus: local culture and folklore, English, history, the arts, civics, and writing. Another concerns the relationship between these subjects and school subjects as ordinarily conceived. Thus, several tend to focus on the development and reform of one school subject—for example, Bread Loaf on English, and the American Social History Project on History—whereas others aim at broader curricular change—for example, the Writing Project on writing across the curriculum and Foxfire on community-based multi-disciplinary projects.

Beyond these variations, the networks vary too in how they design their work. We describe this variation as playing out against a series of four design tensions:

1. *Knowledge aims.* Do the networks put greater emphasis on knowledge of pedagogy or on knowledge of content?
2. *Knowledge sources.* Do the networks attend more to their own members' practice and practical contexts as sources of learning or to the more generalized or theoretical perspectives of expert others—for example, authors, consultants, or staff?
3. *Learning environments.* Are the networks more likely to construct learning environments on the spot to accommodate members' perceived needs or contextual circumstances or are they more likely to deliver preconstructed ones?
4. *Intended impact on practice.* Do the networks put more emphasis on adaptation of what they offer or on faithful replication of it?²

None of the networks we studied seem to have a discrete answer for any of these questions. This may be partly because of variation in how nodes of

the network (e.g., regional centers) or staff operating at different levels of practice actually conduct the network's business. This is a phenomenon that McDonald and others (1999) found to be characteristic of some other reform networks and that Argyris and Schon (1996) describe as characteristic of many organizations. The within-network variation is likely the result too of contextual circumstances—of different problems requiring shifts in design. Still, each of the networks we analyzed appears to have a general tendency with respect to each of the design tensions—one that we use to illustrate the tensions in the section that follows. It is important to point out that these tendencies are not necessarily conscious and deliberate ones. Indeed, one possible benefit of our work may be to assist the networks to recognize and articulate their design tendencies and to reflect on the usefulness and impact of these.

DESIGN TENSIONS

Here we contrast the general design tendencies of two or more networks in our sample to make each of the four design tensions salient and concrete. Our purpose is to peg the tensions, not the networks, because, as we have suggested, the dynamism of the networks defies pegging.

Knowledge Aims: Pedagogy ... Content

- Foxfire
- Humanitas

Developing content knowledge as well as pedagogical content knowledge is a goal of all of the networks, but they vary in the emphasis they place on each. Those that emphasize content also deal with pedagogy—and vice versa—but the emphasis makes a difference in terms of network design.

The Foxfire Teachers Networks—now three geographically dispersed and independent groups of teachers—are bound by dedication to a set of core pedagogical practices and a common networking strategy. The latter begins with an introductory summer course and supports teachers in their attempts to implement the Foxfire approach to learning through ongoing networking activities. The Foxfire approach is inspired by the cultural journalism projects that Rabun County, Georgia, students have been doing and reporting in *Foxfire Magazine* since 1967 (Eddy & Smith, 1991). Their work, focused on southern Appalachian folk culture, has also inspired community-based study projects in many other regions. Although Foxfire encourages such exploration and documentation of local culture and history—and to this extent may be said to have a content focus—the emphasis of its Teacher Networks today is on the development of pedagogy

appropriate to nearly any content. Indeed, Foxfire says that its networks promote “creative ways to learn the required curriculum [presumably any area of required curriculum] in learner-centered, community-focused learning environments”(from www.foxfire.org).

By contrast, Humanitas, a network of about 500 teachers in 33 Los Angeles high schools, puts more emphasis on the content side of pedagogical content knowledge. When this network’s Web site describes its members as “engaged in an ongoing effort to improve their own knowledge,” it refers equally to their knowledge of the humanities and the arts, and their knowledge of good curriculum in these areas (www.lalc.k12.ca.us/humanitas). However, its passion is about the content rather than the pedagogy.

In this regard it puts great energy into linking members to artists, scholars, museums, media companies, and the like and in providing other learning experiences for teachers that take advantage of the region’s cultural resources. Affiliated with the Los Angeles Educational Partnership, a public education fund with a broad reach, Humanitas has the organizational connections necessary to pull this off. Its projects have involved work with Getty, the Armand Hammer Museum, the Academy of Motion Picture Arts and Scientists, and so on. Humanitas also consistently emphasizes interdisciplinary perspectives in the learning experiences it provides its members.

Drawing on these community-based and interdisciplinary learning experiences, teams of teachers work to develop curriculum units and model lesson plans and later to train other teachers to teach them. It is this serial approach to teacher change—first the content, then the curriculum, then the teaching—that distinguishes Humanitas from Foxfire and from some other networks, too. Meanwhile, also in contrast to Foxfire and some other networks, Humanitas leaves the design of the pedagogy to its members and to their own creativity—except that it encourages use of community resources and interdisciplinary perspectives and puts great emphasis on writing.

Knowledge Sources: Teacher ... Expert

- Foxfire
- Humanitas
- Bread Loaf Rural Teachers Network

A second design tension that overlaps the first concerns the relationship between the teacher’s expertise and the expertise of outsiders to whom the network provides access. Lieberman and Grolnick (1996) argue that what distinguishes network-based professional development from the more traditional kind is that networks draw on both outsider knowledge provided

by experts or staff and insider knowledge provided by the networks' own teachers. But exactly how do these different kinds of expertise cohabitate?

Our answer with respect to our sample is that methods of cohabitation vary depending on the network, though cohabitation is always present and always problematic. On the one hand, networks contribute to teacher learning partly by honoring teachers' expertise and by depending on it to situate and modify outside expertise. However, too little attention paid to outside expertise may undercut the networks' reform mission by accepting rather than compensating for members' knowledge deficits. How do networks provide new ways of knowing and validate teachers' ways of knowing at the same time? How can they improve teacher capacity without implying incapacity in a way that proves debilitating?

Foxfire membership begins with the emphasis on the Foxfire approach within a highly structured experience, which Foxfire calls a level-one course. It includes 30 hours of classroom work, followed by 10 hours of coaching during the school year. From the perspective of new members, this clearly puts the early emphasis on outside expertise. However, it makes a difference that the new member is encouraged in the course to apply the Foxfire approach to his or her own unique curriculum project. Humanitas puts the early emphasis on outside expertise, too—though only with respect to content learning. The emphasis shifts to teacher expertise when it comes time to design curriculum units and lessons.

With respect to this continuum, the Bread Loaf Rural Teacher Network's profile is less serial. The Network was formed in 1992 with a mission to provide professional development in the teaching of English and language arts at any level to teachers in low-income rural areas. Members receive tuition, room, board, and travel grants to one of four locations during the summer—New Mexico, Alaska, Vermont, and Oxford, England—all of them affiliated with the Bread Loaf School of English at Middlebury College. Network members also obtain funding during the following school year to carry out projects that they create over the summer ("Bread Loaf Rural Teacher Network," 1998, p. 36). In these summer programs, teachers take courses in literature, creative writing, the teaching of writing, theater, and other areas of English studies—taught by some major figures in the field. Here outside expertise dominates. Simultaneously, they build face-to-face communities focused especially on learning how to undertake classroom inquiry, on appreciating its value in expanding teacher expertise, on building inquiry projects linked to content explorations, and on exploring issues related to rural living and schooling. Here teacher expertise dominates. The conversations of this summer community—within and outside courses—then spill over into the network's online

community called BreadNet. Here online conferences take place, for example, the one described as follows:

Brad Busbee's class in Ocean Springs, Mississippi, and Risa Udall's in Saint Johns, Arizona, are reading selections from Beowulf and John Gardner's novel *Grendel*. The conference begins with the students exchanging myths or legends from their particular area. This is followed by character defenses, particularly concentrating on the character of Grendel who is the villain in the epic. Gardner gives an entirely different view of the villain through his novel, and the students explore that new perspective, exchanging writings about their views of the novel vs. the epic. Contact: Brad Busbee or Risa Udall. (www.middlebury.edu/~blse/breadnet.html#conf)

Learning Environments: Constructed ... Delivered

- American Social History Project
- Empire State Partnerships

Pennell and Firestone (1998) distinguish networks in terms of what they call constructed and delivered programs. Constructed programs emphasize joint building of agendas by participants and facilitators, and thus “reflect quite closely the skills and interests of the teachers who attend” (p. 355). They are typically geared toward more experienced teachers—perhaps those who have become involved in leadership aspects of the network. Delivered programs, by contrast, “tend to have fixed agendas or scripts and are usually aimed at teachers who are less experienced in new forms of instruction” (p. 355). Pennell and Firestone say that networks occasionally offer a mixed program, though in our sample, mixing is the norm. A meeting of Foxfire, Humanitas, or Bread Loaf Rural Network teachers is likely to have more or less a constructed—or delivered—agenda, depending on the previous network experience of the meeting's participants. Still, as with all the design continua we explore here, there are patterns of emphasis worth noting.

The difference between the American Social History Project (ASHP) and the Empire State Partnerships (ESP) has much to do with differences derived from the disciplines they represent and reflects as well the networks' different strategic aims. ASHP wants to change the content of American History courses in a very particular way, whereas ESP wants to increase the presence and quality of arts in the schools.

The educational division of ASHP was started in 1986 in an attempt to introduce what was then the new social history—including labor history,

women's history, and the history of particular ethnic and immigrant groups—to teachers who teach history in community colleges, high schools, trade union education programs, and public history forums (Eynon & Friedheim, 1997). Thus, ASHP obviously has a strong content focus, though the content implies pedagogy different from the norm of most history classrooms. For example, ASHP advocates the use of primary source documents—because secondary sources have long neglected social history—and writing to learn, as well as cooperative learning groups because these facilitate the exploration of different social perspectives.

The project's passion—in terms of content and pedagogy—results in a substantially delivered agenda in the monthly seminars offered to new teacher teams in ASHP's 2-year training program. A typical seminar might involve teachers watching a video created by ASHP on a particular historical time period, followed by activities designed by organization staff and network veterans, ones suggestive of what the teachers might design for their own classrooms. The seminars are thus fairly scripted, and the scripts are repeated year after year for network initiates. But ASHP has a more constructed side too. Teams are visited in their schools by a university faculty member who coaches their design of units and lessons. Although these meetings are still heavily content focused, they necessarily take some of their direction from whatever local issues may be salient.

By contrast with ASHP, the Empire State Partnerships (ESP)—also strongly content focused—tends more toward constructed agendas. Begun in 1996, a joint initiative of the New York State Council on the Arts and the New York State Department of Education, ESP creates model arts education partnerships by connecting cultural organizations and schools throughout the state. The purpose of such partnerships is not only to increase student achievement in the arts (in accordance with the state's learning standards) but also in other subject areas too through arts integration. To support the 60 or so partnerships it has founded throughout New York, the organization also maintains a support network, composed of teacher teams from each of the projects as well as other interested teachers. They are invited to participate in an annual statewide 5-day summer retreat, to come to fall and spring regional meetings, and otherwise to stay in touch with each other and the network through a Web site that disseminates information and offers a means of sharing work. Recently, ESP also launched six regional networks, whose participants meet regularly, design their own professional development activities, and provide professional development experiences for others in their regions.

The summer retreat is indeed more retreat than seminar in its character, more constructed than delivered. It offers dedicated planning time for teams during which they do what they need to do. During this planning time, teams have access to consultation by leading arts educators from

projects throughout the country, but the teams set the agenda for the consultation. But the summer retreat—as well as regional meetings—feature somewhat more delivered environments too: group-based creative activities, facilitated conversations and inquiries on particular topics, and workshops focused on network priorities—for example, those titled “Looking at Student Work: Reflective Practice Techniques for Teachers and Artists” and “Effective Planning: Teachers, Teaching Artists, and Art” (www.espartsed.org). None of these, however, are quite as delivered as the delivered side of the American Social History Project.

Impact on Practice: Adaptation ... Replication

- National Writing Project
- Facing History and Ourselves

Perhaps most fundamentally, the teacher networks we analyzed situate themselves between urging teachers to adapt principles they espouse and urging them to replicate practices they prescribe. In this respect, the National Writing Project and Facing History and Ourselves illustrate somewhat different situations—and we might also say the same of the American Social History Project and the Bread Loaf Rural Teacher Network or of Foxfire and the Empire State Partnerships.

The National Writing Project (NWP) aims to affect teachers’ beliefs about how writing works and also about how to teach it, but it has a studied ambivalence about content and pedagogy. Among its key principles, for example, are two ideas: the idea that writing should be taught across all levels of schooling and in all content areas and also the idea that there is no one right way to teach writing. The NWP promotes the exploration of writing and of the teaching of writing within a community that is committed to the sharing of best practices and also experienced in critical reflection. And it promotes the adaptation of these best practices within members’ own unique contexts (Lieberman & Wood, 2003; Fancsali, Nelsestuen, & Weinbaum, 2002).

The NWP’s adaptive orientation derives in part from pervasive ferment today concerning what constitutes good writing and to still unsettled ideas about how to teach people to write. But the orientation also reflects a culture within the NWP that values diverse perspectives and contexts. The focus on diversity is appropriate for a network of 175 loosely coupled local writing projects in all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands—projects that cut across urban, suburban, and rural contexts.

On the other hand, the NWP guards fidelity to what it calls the Writing Project Model—Model referring to the broad design of the local projects. These projects all have a 5-week summer institute for new members that

immerses them in the practice of writing, introduces them to theories of teaching writing, and requires that they demonstrate their own practice of teaching writing. The local projects all engage in local teacher networking, focused on helping members continue to learn within a professional community of writers and teachers of writers. Finally, all the local projects provide continuing professional education programs for other teachers in the local area. These programs are collaboratively designed with local schools and districts, and conducted wholly or in part by veteran writing project teacher-consultants (Lieberman & Wood, 2003).

In contrast to the NWP, Facing History and Ourselves (FHAO) puts emphasis on the replication of particular teaching practices among its members, rather than merely on the replication of project designs. This seems partly the consequence of the explicit learning goals FHAO sets for students. Using especially the period in German history that spans the end of World War I to the rise of Nazism and the Holocaust, the FHAO curriculum aims to “help students reflect critically on the meaning and responsibility of citizenship, not only in society at large, but in the classroom, the neighborhood and the community” (Weinstein, 1997, p. 8).

Teachers are initiated into the program through an intensive summer institute where they explore their own assumptions and experiences concerning race, class, and anti-Semitism—in terms that are often emotionally demanding and moving (Lowenstein, 2003). Indeed the institute immerses teachers in exactly the experiences that FHAO wants for students and using the same materials. As Fine (1995) puts it, the experiences involve “perspective taking, critical thinking, and moral decision making” (p. 12). The materials especially include rich historical case studies. The premise is that immersion affects belief and that affecting teachers’ beliefs about what to teach and how are crucial to encouraging new practice to develop (Lowenstein, 2003).

The FHAO summer institute immersion in moral dialogue is much like the NWP summer institute immersion in writing. They are alike too in that each is punctuated with reflection on curriculum and pedagogy—explicitly raising the question of how teachers might help their students do what they just did themselves. The difference is that FHAO expects the teachers to replicate the lessons (modified, of course, to fit contextual circumstances like grade level), whereas NWP expects that teachers will adapt the experience into myriad lessons.

TOWARD A THEORY OF EFFECTIVE NETWORK DESIGN

We were careful in our analysis of the networks to be descriptive rather than evaluative. After all, we studied only the networks’ designs, not the

effectiveness of these designs. Our purpose was to infer certain dimensions of design that we laid out in the form of four tensions. Having done this, however, we believe that there may be an optimal design tendency with regard to negotiating these tensions and certain other issues that our analysis uncovers. And we believe that research on these matters is called for. In this final section, therefore, we offer several sets of questions that derive from our analysis, and that might form the basis of such research. The questions lend themselves to both social science research and action research—that is, to experimentation and systematic reflection by networks themselves. We think that both kinds of research are required to develop a robust theory of effective network design.

One set of questions arises from our observation that there are naturally occurring variations in the design of teacher networks focused on content and pedagogical content knowledge and that these exist within as well as across particular networks. What difference does such variation make in terms of the quality and depth of teachers' learning? What difference does it make in terms of the quality and depth of students' learning?

Our own hypothesis is that networks focused on teacher learning of content and pedagogical content knowledge might do well to stay toward the middle of each of the continua defined by the design tensions: in their knowledge aims, to focus equally on pedagogy and content; in their knowledge sources, to prize both the teacher and the expert; in the learning environments they provide, to balance the constructed with the delivered; and in their intended impact on practice, to acknowledge the importance of both adaptation and replication. Are we right that network effectiveness depends on such balance? And, if so, how can networks manage to achieve balance?

A second set of questions is suggested by the content focus of our sample. In commissioning the paper on which this article is based, the Woodrow Wilson Foundation hypothesized that networking strategies were likely to vary depending on content focus—that is, that a network focused on the arts might behave differently from a network focused on history. Certainly our findings are consistent with this view, though the limits of our sample render the findings far from conclusive. Are the design tensions we identified in this sample characteristic of teacher networks with other content foci—for example, in mathematics and science? Are the general tendencies we identified in terms of how the networks in the sample negotiate design tensions dependent on their particular content foci?

A third set of questions is suggested by how we frame our analysis. We situate networking for teacher learning within an array of strategies for achieving school reform. This implicitly calls attention to the other strategies and raises a question: How does this strategy compare to others in terms of impact on teachers and students? In this area, however, we think

questions involving complementarity are more important than those involving comparison. This is because we regard it as a given that successful reform requires multiple approaches. Thus we are interested in questions like the following: How might teacher networks design themselves so as to complement school reform efforts focused on accountability? How might they design themselves so as to complement school reform efforts focused on changing the constitutional arrangements of American public schooling—as in the introduction of new governance arrangements, charter schools, and educational vouchers?

A subset of questions concerning complementarity has to do with strategies for teacher learning. For example, how can networks focused on content and pedagogical content knowledge contribute to the preprofessional education of teachers? How can they aid the induction of new teachers into the profession? And how can they assist in the development and maintenance of professional communities of practice? The last of these questions seems to us especially important.

John Seeley Brown and others used the term *communities of practice* to describe a phenomenon they uncovered inside the Xerox Corporation in the 1980s and early 1990s: the work-focused but off-task conversations of people who work together and who come to rely on each other to teach things that no one else can teach them, things concerning the most intimate and often most crucial aspects of their work life (Wenger, 1998). The term has gained much currency recently in school reform circles as the result of several studies that have found positive associations between the presence of communities of practice within particular schools and the schools' success in engaging their students academically and in boosting student achievement (Bryk & Schneider, 2002; McLaughlin & Talbert, 2001; Newmann & Associates, 1996; Newmann & Wehlage, 1995). Can teacher networks foster the development of communities of practice, perhaps by linking newly emerging ones to their more developed counterparts? Can they serve as a source of continuing knowledge for communities of practice in the same way that research suggests they serve individual practitioners?

These questions relate to a problem of great practical interest today. It involves the “scaling up” or replication on a widespread basis of successful local reform. Most accounts of how to scale up reform, including our own, tend to come down to strategies for directly or indirectly influencing teacher learning on the job (Bodilly, 1998; Bodilly & Glennan, in press; Elmore, 1996; McDonald, Klein, Riordan, & Broun, 2003). What we would call networked communities of practice is one of these strategies.

All the questions we raise previously—about optimal design profile, about the role of content in networking, and about strategic complementarity—point to serious theoretical gaps. Why so much advocacy and practice of teacher networking over the last decade or more, and such

lingering theoretical gaps? The reasons seem clear. Working on limited soft-money budgets, teacher networks have worked much harder on doing than on theorizing. Meanwhile, with the notable exceptions cited throughout this article, few researchers studying school reform have paid much attention to networking. We think it is time to address both these circumstances. We hope that the questions we raise here may assist networks to see their work more clearly and adjust it more confidently and may spur other researchers to investigate important dimensions of an important reform phenomenon.

Notes

1 A coauthor of the Lieberman and Grolnick study, Maureen Grolnick, served as our principal contact with the Woodrow Wilson Foundation. She and Bob Orrill of the foundation provided direction for our own study, as well as useful feedback on drafts. They also encouraged us to elaborate our views for publication. We are grateful to them and also to the helpful comments of two anonymous reviewers.

2 The idea of networks negotiating design tensions derives from the work of Lieberman and Grolnick (1996), as does one of the tensions we describe (Tension 2). The other three tensions they identify concern design issues highly relevant to the networks we analyzed but not directly related to the teaching and learning of content and pedagogical content knowledge—how to balance centralization and decentralization, inclusivity and exclusivity, and formality and informality. Another of the tensions we identify (Tension 3) derives from the work of Pennell and Firestone (1996). Their study, like ours, focused on content-focused networks for teacher learning, whereas the Lieberman and Grolnick study analyzed sixteen networks (including two in our sample) with a variety of foci.

References

- Adams, J. E. (2000). *Taking charge of curriculum: Teacher networks and curriculum implementation*. New York: Teachers College Press.
- Argyris, C., & Schon, D. A. (1996). *Organizational learning II: Theory, method, and practice*. Reading, MA: Addison Wesley.
- Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 3–32). San Francisco: Jossey-Bass.
- Berends, M., Bodilly, S. J., & Kirby, S. N. (2002). *Facing the challenge of whole-school reform: New American schools after a decade*. Santa Monica, CA: Rand.
- Bodilly, S. (1998). *Lessons from New American School's scale up phase: Prospects for bringing designs to multiple schools*. Santa Monica: Rand.
- Bodilly, S., & Glennan, T. (Eds.). (in press). *Scaling up reform interventions*. Santa Monica: Rand.
- Bread Loaf Rural Teacher network: A portable community. (1998). *Active Learner: A Foxfire Journal for Teachers*, 3(2), 36–38.
- Bryk, A. S., & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.
- Cohen, D. K., & Hill, H. (2001). *Learning policy: When state education reform works*. New Haven, CT: Yale University Press.
- Darling-Hammond, L., Wise, A. E., & Klein, S. (1995). *A license to teach: Building a teaching profession for 21st century school*. Boulder, CO: Westview Press.

- Eddy, J., & Smith, H. (1991, Winter). Has the program made a difference? How do we know? *Hands On*, 42, 21–46.
- Elmore, R. (1996). Getting to scale with good educational practice. *Harvard Educational Review*, 66(1), 1–26.
- Elmore, R. F., & Burney, D. (1999). Investing in teacher learning. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 263–291). San Francisco: Jossey-Bass.
- Eynon, B., & Friedheim, B. (1997). “It’s about people”: Social and labor history in the classroom. *OAH Magazine of History*, 11(2), 53–61.
- Fancsali, C., Nelsestuen, K., & Weinbaum, A. (2002). *National Writing Project: Year two evaluation report*. New York: Academy for Educational Development.
- Fine, M. (1995). *Habits of mind: Struggling over values in American classrooms*. San Francisco: Jossey-Bass.
- Kennedy, M. M. (1998, April). *The relevance of content in in-service teacher education*. Paper presented at the annual meeting of the American Educational Research Association. San Diego, CA.
- Kennedy, M. M. (1999). The role of teacher education. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 54–85). San Francisco: Jossey-Bass.
- Lieberman, A., & Grolnick, M. (1996). Networks and reform in American education. *Teachers College Record*, 98(1), 7–45.
- Lieberman, A., & McLaughlin, M. W. (1992). Networks for educational change: Powerful and problematic. *Phi Delta Kappan*, 73(9), 673–677.
- Lieberman, A., & Miller, L. (1999). *Teachers transforming their world and their work*. New York: Teachers College Press.
- Lieberman, A., & Wood, D. (2001). When teachers write: Of networks and learning. In A. Lieberman & L. Miller (Eds.), *Teachers caught in the action: Professional development that matters* (pp. 174–187). New York: Teachers College Press.
- Lieberman, A., & Wood, D. (2003). *Inside the National Writing Project: Connecting network learning and classroom teaching*. New York: Teachers College Press.
- Little, J. W. (1999). Organizing schools for teacher learning. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 233–262). San Francisco: Jossey-Bass.
- Louis, K. S., Kruse, S. D., & Marks, H. M. (1996). Schoolwide professional community. In F. M. Newmann & Associates (Eds.), *Authentic achievement: Restructuring schools for intellectual quality*. San Francisco: Jossey-Bass.
- Lowenstein, E. (2003). *Teachers transformed? Exploring the influence of Facing History and Ourselves on teachers’ beliefs about civic responsibility and participation*. PhD dissertation, New York: New York University.
- McDonald, J. P., Buchanan, J., & Sterling, R. (in press). The National Writing Project: Scaling up and down. In S. Bodilly & T. Glennan (Eds.), *Scaling up reform interventions*. Santa Monica: Rand.
- McDonald, J. P., Hatch, T., Kirby, E., Ames, N., Haynes, N. M., & Joyner, E. T. (1999). *School reform behind the scenes*. New York: Teachers College Press.
- McDonald, J. P., Klein, E., Riordan, M., & Broun, S. (2003). *Scaling up the big picture. Monograph 1, Scaling-Up Study*. New York: Steinhardt School of Education, New York University.
- McLaughlin, M. W., & Talbert, J. E. (2001). *Professional communities and the work of high school teaching*. Chicago: University of Chicago Press.
- Newman, F., & Wehlage, G. (1995). *Successful school restructuring*. Alexandria, VA: Association for Supervision and Curriculum Development.

- Pennell, J. R., & Firestone, W. A. (1996). Changing classroom practices through teacher networks: Matching program features with teacher characteristics and circumstances. *Teachers College Record*, 98(1), 46–76.
- Pennell, J. R., & Firestone, W. A. (1998). Teacher to teacher professional development through state-sponsored networks. *Phi Delta Kappan*, 79(5), 354–357.
- Schon, D., & McDonald, J. (1998). *Doing what you mean to do in school reform: Theory of action in the Annenberg challenge*. Providence, RI: Brown University.
- Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), 1–22.
- Useem, E., Buchanan, J., Meyers, E., & Maule-Schmidt, J. (1995, April). *Urban teacher curriculum networks and systemic change*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco.
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge, UK: Cambridge University Press.
- Weinstein, J. L. (1997). Lessons of history. *Thrust for Educational Leadership*, 27, 8–12.

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