

The National Network of Eisenhower Regional Consortia and Clearinghouse

Appalachia Regional Eisenhower Consortium at AEL
Address: PO Box 1348, Charleston, WV 25325
Phone: (800) 624-9120, Fax: (304) 347-0409
URL: <http://www.ael.org/eisen/>
Director: Sandra Angius
Region served: Kentucky, Tennessee, Virginia, and West Virginia

Eisenhower Regional Alliance for Mathematics and Science Education at TERC
Address: 2067 Massachusetts Ave., Cambridge, MA 02140
Phone: (617) 547-0430, Fax: (617) 349-3535
URL: <http://ra.terc.edu/>
Director: Mark Kaufman
Region served: Connecticut, Maine, Massachusetts, New Hampshire, New York, Puerto Rico, Rhode Island, Vermont, and the Virgin Islands

Eisenhower Regional Consortium for Mathematics and Science at Mid-continent Research for Education and Learning
Address: 2550 S. Parker Road, Suite 500, Aurora, CO 80014
Phone: (800) 922-3636, Fax: (303) 337-3005
URL: <http://www.mcrel.org/programs/erc>
Director: Ceri Dean
Region served: Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Wyoming

Eisenhower Regional Consortium for Mathematics and Science Education at WestEd
Address: 730 Harrison Street, San Francisco, CA 94107
Phone: (415) 615-3214, Fax: (415) 512-2024
URL: <http://www.wesled.org/werc/>
Co-Director: Art Sussman
Co-Director: Steve Schneider
Region served: Arizona, California, Nevada, and Utah

Eisenhower Southwest Consortium for the Improvement of Mathematics and Science Teaching at Southwest Educational Development Laboratory
Address: 211 East Seventh Street, Austin, TX 78701
Phone: (512) 476-6861, Fax: (512) 476-2286
URL: <http://www.sedl.org/scimas/>
Director: Vicki Dimock
Region served: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas

Mid-Atlantic Eisenhower Regional Consortium for Mathematics and Science Education at Research for Better Schools
Address: 112 North Broad Street, Philadelphia, PA 19102
Phone: (215) 568-6150, Fax: (215) 568-7260
URL: <http://www.rbs.org>
Director: Keith Kershner
Region served: Delaware, the District of Columbia, Maryland, New Jersey, and Pennsylvania

North Central Mathematics and Science Consortium at Learning Point Associates
Address: 1120 Diehl Road, Suite 200, Naperville, IL 60563
Phone: (800) 356-2735, Fax: (630) 649-6710
URL: <http://www.ncrel.org/msc/msc.htm>
Director: Gil Valdez
Region served: Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin

Northwest Eisenhower Regional Consortium for Mathematics and Science at Northwest Regional Educational Laboratory
Address: 101 SW Main Street Suite 500, Portland, OR 97204
Phone: (503) 275-9500, Fax: (503) 275-0445
URL: <http://www.nwrel.org/msec/hwec>
Director: Kit Peixotto
Region served: Alaska, Idaho, Montana, Oregon, and Washington

Pacific Mathematics and Science Regional Consortium at Pacific Resources for Education and Learning
Address: 900 Fort Street Mall, Suite 1300, Honolulu, HI 96813
Phone: (808) 441-1300, Fax: (808) 441-1385
URL: <http://www.prel.org>
Director: Paul Dumas
Region served: U.S.-affiliated entities of American Samoa; Commonwealth of the Northern Mariana Islands (CNMI); Federated States of Micronesia (FSM)—Chuuk, Kosrae, Pohnpei, and Yap; Guam; Hawaii; Republic of the Marshall Islands (RMI); and Republic of Palau

Southeast Eisenhower Regional Consortium at SERVE
Address: 1203 Governor's Square Boulevard, Suite 400, Tallahassee, FL 32301
Phone: (850) 671-6033, Fax: (850) 671-6010
URL: <http://www.serve.org/Eisenhower/>
Director: Francena Cummings
Region served: Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina

Eisenhower National Clearinghouse
Address: 1929 Kenny Road, Columbus, Ohio 43210
Phone: (800) 621-5785, Fax: (614) 292-2066
URL: <http://www.enc.org>
Director: Len Simults

What Experience Has Taught Us About

COLLABORATION

Facilitating Mathematics and Science Reform: Lessons Learned Series



The Eisenhower Mathematics and Science
Consortia and Clearinghouse Network

2004

www.mathsciencenetwork.org

What Experience Has Taught Us About Collaboration

Table of Contents

Preface	2
Introduction	3
What is Collaboration?	5
Steps in the Process	7
Strategies for Building Collaborative Relationships	12
Addressing “Deep Structure” Issues	19
To Collaborate or Not to Collaborate	21
References	22

This report is a collaboration of the National Network of Eisenhower Regional Consortia and Clearinghouse. It is based on work sponsored wholly or in part by the Office of Elementary and Secondary Education, U.S. Department of Education, under grant numbers R319A000001, 2, 4, 6, 7, 9, 10, 11, 12, and 13; and contract number RJ9707001. It does not necessarily reflect the views of the Department of Education or any agency of the U.S. government. This publication is in the public domain and may be reproduced without permission. Please acknowledge the source as the National Network of Eisenhower Regional Consortia and Clearinghouse.

Research for Better Schools was responsible for the layout and editing.

The cover design was created by Phillips Saddler Creative.

March 2004

Preface

Facilitating Mathematics and Science Reform: Lessons Learned Series

Created and established by the U.S. Congress, the Eisenhower Regional Consortia and the Eisenhower National Clearinghouse have collaborated with each other and with many state, regional, and national partners to improve mathematics and science education. Since 1992, the 10 consortia and the Eisenhower National Clearinghouse have built an effective national network that has provided valuable, and often unique, services and resources to mathematics and science educators across the nation. To a great extent, this network has been a catalyst for leveraging and brokering partnerships that have improved professional development and classroom practice in mathematics and science.

The consortia have worked diligently to expand and improve mathematics and science education through high quality technical assistance and professional development for teachers and administrators at all levels of the educational system. The major objective of this work is to build the capacity of teachers, professional developers, and school leaders to deliver and support improved and effective curriculum and instructional practices in mathematics and science. Through providing products and services that are built on national and state standards, current knowledge about teaching and learning, and research-tested strategies, the consortia have been able to meet large numbers of requests for shorter-term technical assistance. In many cases, however, intensive site work focused on services designed to directly effect teacher change and student achievement has been undertaken.

Dissemination has been a key network strategy for communicating information to clients about exemplary products and practices. The network has disseminated high quality materials and targeted resources to millions of clients through print, electronic, and in-person media. These resources include information on mathematics and science curricula, instruction, equity, professional development, and assessment. Access to timely and quality information has been a key feature of the network's success.

This series, *Facilitating Mathematics and Science Reform: Lessons Learned*, emerged from the premise that high quality procedural knowledge has been acquired through years of working as a network engaging many thousands of clients in the improvement of mathematics and science education. Though each region has its own unique context and characteristics, core common strategies for our work have yielded significant lessons about how to be effective in facilitating reform.

The series attempts to capture this hard-won knowledge in lessons learned on the following topics: collaboration, professional development, intensive site work, and dissemination. Each document represents the reflective thinking of professionals who for more than 10 years have been participants and observers of mathematics and science reform. The series highlights practical knowledge acquired from the systematic use of strategies and tools that facilitated education reform. Moreover, in each document, the writers interpret and/or connect practical experience to research.

Dr. Francena Cummings, Team Leader
Southeast Eisenhower Regional Consortium @ SERVE

Introduction

This document is intended as a primer on collaborative work. It reflects the cumulative knowledge of the 10 members of the federally mandated Eisenhower Regional Mathematics and Science Education Consortia Program,¹ for whom these lessons are lived experiences. This publication is the first of a planned series of four. The remaining topics are professional development, intensive services, and dissemination. The purpose of the Eisenhower Regional Consortia program is to help improve the nation's mathematics and science education through the provision of a multitude of services, including technology, curriculum and instructional resources, professional development, dissemination, and forums for communication.

From the current joint National Science Foundation/U.S. Department of Education Mathematics and Science Partnerships initiative to the future Comprehensive Assistance Centers, a new generation of programs is about to emerge for whom collaborative work must become a way of life. These programs can shorten their learning curve and boost their effectiveness by drawing on the understandings of those who came before them.

Granted, there exists substantial—and often useful—literature addressing collaboration in educational settings. But that literature is geared primarily to the process by which various stakeholders come together to create a new, distinct collaborative entity. This report aims to help any agency, group, or program whose main function is working with others. Rather than speaking about how to establish a *collaborative entity*, the report addresses ways of building *collaborative relationships*.

The Eisenhower Regional Consortia have much to contribute to the knowledge base regarding collaborative work. In 1992, when the U.S. Department of Education first established the consortia, the idea of collaboration among educational stakeholders was just taking root. There was a growing realization among parents, school staffs, policymakers, and service providers that the education of our nation's youth was a collective and intricately interwoven endeavor. Yet at the same time, with states varying considerably in their administrative and support structures, and with the daily tasks of education rooted in thousands of autonomous school systems, collaboration among diverse educational stakeholders was a challenge.

This report aims to help any agency, group, or program whose main function is working with others.

With a specific mandate to work as partners with regional, state, and local stakeholders, the consortia first had to prove they were worth the trouble it took to open the door and let them in. Over the past 10 years, they have moved from the new players in the mathematics and science arena to reform leaders. For each of the regional consortia, collaboration is a basic mode of doing business, with nearly three-fourths of consortia activities involving at least one collaborative partner. They have succeeded in establishing an extensive array of collaborative relationships. As a result, the consortia are considered “a valued contributor to the improvement of mathematics and science education.”²

This report explores the process by which the consortia have developed from new projects of unknown value into effective facilitators of school improvement. The report begins with a brief look at the ways in which collaboration is characterized in the literature and in the consortia's work. It then moves to a discussion of strategies and steps for building effective collaborative relationships. Finally, the report explores several “deep structure” issues (Crowson & Boyd, 1996) that present the most challenging and deeply resistant barriers to collaborative work.

The authors have invested resources in preparing this document so that other persons who work in across-organization settings in education might benefit from the consortia's hard-won learnings. This knowledge has been gained from experiences with hundreds of collaborative partners over 10 years. It is hoped that the syntheses and recommendations which follow will help colleagues develop effective strategic plans for collaboration and avoid some of the pitfalls they will be likely to face.

Notes

¹ The Eisenhower Regional Consortia Program is authorized under the Elementary and Secondary Education Act of 1965 as amended by Title XIII, Part C of the Improving America's Schools Act of 1994.

² Data on the frequency of collaboration is from the consortia network's annual cross-consortia evaluation reports; quote is from a national evaluation by SRI International (2000).

What is Collaboration?

Definitions from the literature

Like many educational watchwords, collaboration can be defined in simple or complex terms. Much of the research literature presents detailed definitions or schema that characterize collaboration as the most interactive, interdependent end of a wide spectrum of activity. A number of authors refer to a continuum involving *coordination*, *cooperation*, and *collaboration*. Short-term, specifically delineated activities that require no change in individual agencies' policies, procedures, funding, or decision-making mechanisms fall at one end of the continuum. These more limited arrangements are labeled either *coordination* or *cooperation*, depending on the author, with the other term used to describe a middle ground (Hord, 1986; Intriligator, 1992; Himmelman, 1996).

In contrast, much of the literature describes *collaboration* as involving long-term relationships that address multiple activities and require commitments and adaptation from each of the participating agencies or groups. Collaboration, according to this view, requires formal commitment among all partners to “a definition of mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards” (Mattesich & Monsey, 1992, p. 7).

Other authors take a simpler view of collaboration. For example, Wang, Haertel, and Walberg (1997) define collaboration for their purposes as “the process of achieving a goal that could not be attained efficiently by an individual or organization acting alone” (p. 7). This definition reflects the concept of *collaborative advantage* discussed by Huxham (1996): “Collaborative advantage will be achieved when something unusually creative is produced—perhaps an objective is met—that no organization could have produced on its own and when each organization, through the collaboration, is able to achieve its own objectives better than it could alone” (p. 14).

The regional consortia use the term *collaboration* to describe a great range of activities.

The role of collaboration in consortia work

The regional consortia use the term *collaboration* to describe a great range of activities:

- convening regional and state advisory boards, teams, or steering committees,
- maintaining ongoing, informal relationships with members of each consortium,
- sponsoring regional and state forums attended by a variety of stakeholders (with heavy input from participants regarding topics and meeting formats),
- sponsoring and coordinating information-sharing and problem-solving meetings and work sessions (designed in consultation with participants),
- jointly sponsoring meetings, workshops, professional development activities, and product dissemination,
- providing or brokering technical assistance and professional services, often in multiple sessions and over several years and with extensive input from participants, and
- providing funds for local design and implementation of professional development, materials development, or similar projects, usually with ongoing support and involvement from consortia staff or brokered consultants.

Based on the collaborative literature, many of these activities—taken individually—might be characterized as *cooperation* or *coordination* rather than *collaboration*. But for the consortia, two factors alter the picture. First, consortia activities are almost always designed *in consultation with* the constituents who participate in them. And second, discrete activities almost always occur within a larger, ongoing context of *relationship building*.

For the consortia, then, their collaborative work reflects characteristics described in the literature: mutual goals; shared decision making, resources, and accountability; and impacts that could not be achieved in isolation. But collaboration is a cumulative process involving a range of often more limited activities and approaches that, over time, build the confidence and trust that are essential to interdependence.

Steps in the Process

Collaboration is developmental as well as cumulative. The literature on collaboration consistently describes stages and steps in the process of establishing an effective collaborative group (see for example, Melaville, Blank, & Asayesh, 1993; Winer & Ray, 1994; Epstein, 1995; U.S. Department of Education, 1996; SEDL, 1998). These vary in their precise sequence, activities, and emphases; however, researchers generally address the following seven broad steps:

- convening the group,
- assessing strengths and needs,
- building the group's capacity to work collaboratively (generally via a set of skills-building activities addressing, among other things, communication and decision making),
- planning specific activities or projects to be undertaken by the group,
- implementing these activities or projects,
- evaluating the results, and
- sustaining the collaborative, usually via an iterative process and/or institutionalization (SEDL, 1998).

Again, however, this literature is skewed toward the development of a self-standing collaborative group, rather than toward an agency, program, or project seeking to work collaboratively with a variety of others. For the consortia, the developmental process is best described in somewhat different terms. Veteran consortia staff members outline four critical stages in the evolution of their work in building collaborative relationships:

- gaining a place at the table,
- finding a niche,
- assuming a leadership role, and
- sustaining the work.

Gaining a place at the table

The consortia were created from whole cloth, through a federal initiative, in 1992. They were designed to supplement, support, and help to coordinate existing reform-based services — a needed but delicate role. In the beginning, their biggest challenge was to establish themselves as programs that could make a difference within their regions, without threatening those who were already working to improve mathematics and science education. For most of the consortia, this meant, at first, visits to state education agency staffs and to other networks and organizations already doing mathematics and science reform work in the states.

The range of these stakeholders was wide, and examples of reform efforts could be found not only in state departments of education but also in the systemic initiatives, teacher preparation programs, teachers' professional associations, regional service centers, informal education providers like museums and zoos, and individual school districts. Often, third party facilitators helped to arrange those first meetings—a lesson that served the consortia well. Insiders can open doors that newcomers often cannot.

After the introductions came probation. The consortia looked for opportunities, however small, to participate in their regions' reform efforts. The task, at this early stage, was primarily to listen and respond, rather than to press an independent agenda. Again, friendly contacts helped to pave the way, as did the promise of resources that the consortia could offer.

The consortia's early efforts to respond to constituents' requests led, in many instances, to long-term working relationships. And they sometimes had other unforeseen results. As an example, the project director of a teacher enhancement program asked one consortium to help with the publication of a collection of papers written by teachers involved in action research. The consortium, needing to establish a relationship with the university, agreed. The resulting publication, *Action Research: Perspectives from Teachers' Classrooms*, is now used as a textbook at several teaching colleges. The publication's success has led to the production of a series of monographs focused on teacher professional development and research.

Finding a niche

The consortia took seriously the federal mandate of filling gaps in existing reform efforts. That mandate also proved to be an effective strategy for establishing a valued place in the reform landscape.

As one veteran staff member put it, "the consortia rode into being on the vehicle of standards." *Science for All Americans* (1989) and the National Council of Teachers of Mathematics' curricular (1989) and teaching standards (1991) were new on the national stage. Local and state stakeholders were looking around for sources of expertise and support related to the emerging issue of standards and the curriculum frameworks in which standards were to be embedded. The consortia adapted

and disseminated materials; consulted with states and their systemic initiatives; sponsored forums, conferences, and workshops; and provided professional development grounded in the national standards. Consortia provided resources to schools, teacher preparation programs, and other entities to support standards-based professional development or curriculum development.

Over time, other topics took the forefront. The consortia kept pace with the topics, but they—and their constituents—began to perceive the consortia's

niche as one of *role* rather than one of topic or issue expertise. The consortia were, and are, unique in their role as conveners and facilitators, bringing together stakeholders who typically work in isolation and leveraging resources for the greatest possible impact. The following comments are typical of constituents' perceptions regarding the value of this role:

[Before the consortium came along,] east Arkansas never talked to west Arkansas, math never talked to science.

[Staff from the state's intermediate education agencies] always tended to stay within their own lines, but now they have much more collaboration in delivering professional development.

Our relationship [with the consortium] has certainly deepened over time, but it has also served to strengthen relationships with our other partners... We have been included in a lot of regional activities and that has helped tremendously with the network.

The consortia were, and are, unique in their role as conveners and facilitators, bringing together stakeholders who typically work in isolation and leveraging resources for the greatest possible impact.

Assuming a leadership role

The consortia set out to take a supporting, rather than a lead role in mathematics and science reform. But their unique role as conveners increasingly placed them in the forefront of regional and national reform efforts. Working with educators throughout the system and across political boundaries, consortia staff supported and linked isolated efforts at school improvement and promoted the sharing of effective strategies and approaches. Over time, the consortia's partners urged them to take the lead in addressing emerging issues.

As leadership roles have evolved, often with impetus from other regional stakeholders, consortia staffs have developed a leadership style that is facilitative rather than directive. As one consortium staff member explained:

It is difficult to lead when no one wants to follow, so assuming a leadership role in a collaborative group can be a sensitive matter. In some of our early attempts at collaboration, everyone at the table was a leader—project, program, department—and came with specific notions about leadership and ways of work. Establishing norms for a collaborative culture is essential in moving a collaborative project along. This may include redefining leadership and assigning responsibilities so as to share the work.

One example of the consortia's facilitative leadership is their approach to working with supervisors of mathematics and science in the state education agencies. This small, select group of top administrators is often isolated from colleagues, both across states and within their own agencies. The consortia took the lead in setting up opportunities for those key staff personnel to meet and exchange ideas with their peers. Working through the national leadership for the Council of State Supervisors of Mathematics and the Council of State Science Supervisors, the consortia have developed and supported professional opportunities for the membership, sponsoring their participation in national workshops, meetings, and trainings. Though the turnover rate among these professionals is significant, working through the associations has enabled the consortia to provide ongoing support for these individuals as a collective.

Another leadership example is the consortia's approach to developing and testing cutting edge professional development concepts and strategies, and then disseminating these to other professional developers. One such strategy is "lesson study," a professional development process used extensively in Japan for engaging teachers in professional conversations that focus on student thinking and understanding. It is being adapted to the U.S. setting through collaborative partnerships among the consortia, schools, and other organizations. In lesson study, teachers take on the role of researchers. They collaborate to establish a research theme, write research lessons, observe and discuss the lessons, and write research reports that center on student learning. Teachers work as a professional group in examining their classroom practice and developing common language and expectations around quality teaching and learning.

Though the individual consortia work with regional audiences, they also have created opportunities to work as a group serving the whole country. The consortia's collaboration with the Eisenhower National Clearinghouse (ENC) is an example of how the consortia have provided national leadership for regional audiences. When the ENC was funded, it was required to support a "demonstration" site in each of the 10 consortia regions. As schools became more and more technologically capable, the ENC staff began to seek ways of promoting additional sites in each region in addition to the demonstration

sites. The consortia saw an opportunity to develop access far beyond ENC through this network, and established a network of Access Centers that provide hands-on access to classroom materials and curricula to local teachers. Since 1998, the number of active material access centers has grown from 10 to over 250.

Establishing norms for a collaborative culture is essential in moving a collaborative project along.

The consortia have become successful collaborative leaders in their regions for a variety of reasons, but two characteristics of these leadership approaches show how the consortia have used collaboration both as a strategy and an approach to leadership. Consortia activities consistently mix strategies for enabling collaborative relationships among other key stakeholders, and they provide information about specific approaches for addressing school improvement.

Sustaining the work

As the consortia have matured, they have focused increasingly on ways of assuring that the work they support can be sustained over the long term. Making strategic choices is one element in boosting the chances for sustained improvement. As an established, trusted partner in the states' reform movement, each consortium has gained the capacity to choose from an array of potential activities and approaches, selecting those that offer the strongest potential for substantive impact. For example, one consortium noted in its 2000 grant report:

Over the years, staff has learned that establishing networks that were not closely connected to critical state and regional initiatives did not add value... [These tended to be] isolated activities that did not facilitate the coordination of resources.

Other important elements in sustaining reform efforts include developing a strong network of peers who will keep in touch even as they change jobs or locations; using supportive arrangements that require some commitment of funds from local or state partners; and demonstrating the impact of activities and services. Several illustrations characterize how the consortia have combined these elements to sustain their efforts.

The first is representative of many similar examples from across the consortia. When the consortia were established, small groups were already trying to work together to influence educational practices. These efforts tended to be scattered and independent both of one another and of the larger reform community. In every region, consortia resources and support provided critical energy to enable these groups to step up their capacity and influence.

In one mid-western state, a group had been meeting regularly to discuss how to coordinate its work and to host a statewide student tessellation art competition. With support from the regional consortium, the group began to host annual statewide meetings to discuss issues that impacted mathematics and science education, K–20. Eventually the group incorporated as a private, nonprofit organization in order to support a growing role in shaping the vision and coordination for the statewide mathematics and science education agenda. Participants from across the state education community serve on its board of directors and collaborate with national and state organizations.

The consortia also have collaborated to build the capacity of professional development providers across the country. For example, a university-sponsored project in one southern state had been designed as a six-week professional development activity with support from the statewide systemic initiative. In an effort to refine and enlarge the project, leaders successfully applied for resources through a regional consortium-sponsored competition. Over the next three years the project expanded into a regional effort impacting teachers in two additional states. The consortium continued to collaborate with the university to develop other ongoing funding for the project. The project has now secured its own federal funding to provide vital professional development for educators in the region.

As a final example, one state agency sought to target some state Eisenhower funds toward building professional development collaborations among school districts, state regional service centers, and institutions of higher education. With support from the regional consortium, the key players were convened in a series of meetings to consider the issues, barriers, and strategies for promoting such partnerships. As the interest and capacity of science educators across the state outgrew the funding resources, the group applied for and received funding from the National Science Foundation.

Strategies for Building Collaborative Relationships

In addition to a sequential view of collaborative stages, it is useful to look at collaborative strategy recommendations. The consortia's recommendations for building collaborative relationships can be sorted into four basic categories: *why*, *who*, *what*, and *how*. These are discussed in some detail below.

Why

Know the purpose of collaborating. Collaboration for its own sake will quickly fall apart. Always know *why* you are collaborating. In the early stages, it may be necessary to emphasize relationship-building more than specific outcomes, but generally the “why” of collaborating needs to relate to *impact*—the ability to reach further or accomplish more than any single partner could achieve alone.

One of the common pitfalls of collaborative endeavors is the tendency to emphasize process over content. Though the consortia have a specific mandate for networking and collaboration, more importantly, those activities are vehicles for addressing the substantive content of mathematics and science education. As one consortium director noted, “Our story is, at some level, that content matters—the substance of the work is what’s important.”

Who

Target the most critical unit for change. The regional consortia have benefited from the frustrations of earlier reform movements, particularly the large-scale school improvement initiatives of the 1970s. Perhaps most critical is the understanding that, as researcher Milbrey McLaughlin (1990) has noted, educational change is “a problem of the smallest unit.” This insight is not intended to blame teachers for the multifaceted problems of the entire educational system. Rather, it is a reminder that, to accomplish substantive change, reform efforts must penetrate what Richard Elmore (1996) has called “the core of educational reform.” He describes this as meaning “how teachers understand the nature of knowledge,” “the student’s role in learning and how these ideas are manifested in teaching and class work,” and how the system can effectively support teachers in this most challenging work (p. 2).

One of the common pitfalls of collaborative endeavors is the tendency to emphasize process over content.

The consortia, then, have focused the majority of their energies and resources on the classroom. This is not an easy choice for any program with a multi-state service region—especially when the program’s mandate includes work at state, regional, and national as well as local levels—and all of the consortia have struggled at times to maintain a workable balance. One consortium attempted to address this issue through the creation of a regional professional developers network. The growth of this key group was supported as the direct line of services to classroom teachers. Since a consortium could not expect its work to scale up across an entire region, using the professional development providers enabled contact with more teachers. In another consortium, staff thought a lot about this dilemma and consciously made the decision to use an “unbalanced” approach. Through its three strands of work (partner sites, annual institutes, and strategic alliances), this consortium was involved intensively at the classroom level, but also worked closely with the state departments of education to address specific priorities through the co-sponsorship of annual institutes. The consortium’s strategic alliances allowed it to work closely with other organizations and agencies, focusing on broader, often regional or national issues.

Identify critical players. For every substantial activity—for example, creating a consortium advisory board or convening participants for an annual forum—the consortia have found it essential to identify and engage individuals whose support, because of their reputation or role position, is critical to the activity’s success. In discussing collaborative groups, Melaville, Blank, and Asayesh (1993) identify three key membership ingredients: “clout, commitment, and diversity” (p. 25). Without clout, these researchers note, the collaborative group will lack the authority to get things done or to get others to commit time and energy to the effort. On the other hand, clout is not the only essential ingredient.

Stakeholders, particularly those chosen for their “clout,” can sometimes be difficult or demanding. The temptation is either to exclude difficult individuals or to placate them by obeying every demand. Resist these temptations; if you bypass a troublemaker with clout, the consequences are likely to be greater than the trouble he or she might cause as a partner. At the same time, it’s not necessary to accede to every difficult demand. For example, one consortium had to deal with a state agency representative who demanded the right of approval over any individual, group, or school district to be included in any consortium activity. Consortium staff included the representative on their regional advisory board and invited him to major forums and meetings; when appropriate, they sought his advice about other constituents to include in consortium events. However, they never asked for his approval or excluded someone in response to his demand. The consortium staff had to suffer his complaints, but the clear success of consortium activities left him without other sympathizers. Over time, he became one of the consortium’s most consistent and supportive constituents.

Be inclusive. Individuals with “clout” are essential participants, but diverse representation is equally important. Be sure all constituencies are represented; be sure your staff, advisory groups, projects, and participants reflect your audience’s diversity in role, discipline, geography, race/ethnicity, culture, and gender. Such diversity is critical for achieving several objectives: meeting this nation’s commitment to equity, credibility with audiences, and effectiveness in planning and implementing activities that are responsive to the needs of diverse constituencies.

Many partner groups will be weak in racial and cultural diversity. Don’t settle for “having to work with how things are.” Take the extra steps. For example, one consortium serves a state in which, in the beginning, state agency staff, leaders of major educational organizations, university personnel, and other key leaders were virtually all white. When asked, these constituents had difficulty identifying others who represented the state’s significant African American population. Consortium staff had to work hard to achieve racial diversity among that state’s representatives to the consortium’s advisory groups and major meeting participants, reaching beyond the usual network of educational service providers, and even contacting colleagues in other states. As another example, one region’s Historically Black Universities are the source of a considerable number of science and mathematics teachers. Therefore, these institutions of higher education became a priority for consortium partnerships and services. This relationship has been mutually beneficial to the consortium and to the respective universities.

Be sure to attend to groups who traditionally have had little or no voice, even when critical players recommend otherwise. For the consortia’s work, one critical constituency that tended to be poorly represented in state and regional planning and policy discussions was the teachers. Assuring a strong classroom teacher voice in consortium activities, even beyond the local level, has greatly boosted the consortia’s credibility with school staffs. As one teacher noted:

One of the things that I like a lot about the consortium and my work with them is that they always treat teachers and administrators as true professionals and they look at everyone as if they have something to share and that we can all grow by working together.

Teachers have become frequent members of consortia regional advisory boards, expert review panels, and planning teams for services. While time away from the classroom can be an issue, it is worthwhile to make arrangements so that these groups can hear a variety of teacher voices.

Build on existing relationships. Personal recommendations are far more effective than slick brochures or PowerPoint presentations in getting the attention of those with whom you seek to work (though you might need those, too). Start with your existing contacts, whether personal or institutional. As noted earlier, in their first months and years of operation, the consortia were helped immensely by friendly contacts who made valuable introductions, vouched for their competence and good intentions, and recommended them as sources of help.

Personal recommendations are far more effective than slick brochures or PowerPoint presentations in getting the attention of those with whom you seek to work.

In some cases, you may have to stretch a bit further than your own close contacts. In one state, the consortium staff was trying to engage the state education agency (SEA) staff in focusing on curriculum frameworks, but the SEA personnel remained completely uninterested. So the consortium staff invited a dynamic, enthusiastic teacher who had participated in a consortium

event to attend a Project 2061 session addressing curricular reform. That teacher, sold on the merits of curriculum frameworks, began pushing the idea with her SEA representatives, who were much more inclined to listen to a teacher they knew and respected.

Make it easy to get involved. Almost everyone engaged in the educational system is overworked and underpaid. Never assume that the power of your ideas will get folks engaged (though that power may keep them engaged); there are lots of good ideas around. Do everything you can to make it easy for your key constituents to participate, whether it is paying travel costs or adapting a meeting schedule. At the local level, encouraging teacher participation generally means, at a minimum, providing either stipends or funds for substitute teachers. One consortium's advisory board asked them to limit support for other state level professional development in order to sponsor a regional professional development convocation that would not cost participants to attend. As a result, the resources were available to cover all participants' needs.

Expect suspicion/threat. If you encounter resistance, even suspicion, as you begin meeting your constituents, don't be surprised or offended. Most educators have seen all sorts of programs come and go, many of them leaving little but piles of paper behind. One consortium director noted:

I had people who refused to come into the first meeting. Curiosity and fear of being left out will get people to the door, but they won't necessarily be friendly or receptive; you have to draw them in.

For example, in identifying partner sites, after an initial written application phase, one consortium conducted audio-conferences (separate ones for administrators and teachers) with potential sites. After those, an initial visit was made where expectations and responsibilities (both of the site and consortium) were discussed and negotiated.

Expect turnover. Turnover is an ever-present problem with constituents—especially local school staffs—and with program staff as well. Though turnover will always be a problem, stick with individual relationships as much as possible. Even if people move or change roles, keep them involved when at all possible; long-term contact is the only way to build trust. You can also avoid some problems by planning ahead. For example, one consortium always identifies not one but two contact people within every partner institution, making certain that each of them has a clear understanding about the collaborative activities that are underway. Then, if one contact person leaves, another is already in place.

What

Ground your work in useful, research-based ideas. The consortia’s perspectives regarding what constitutes high quality mathematics and science instruction have been a significant factor in their effectiveness in working with regional stakeholders. The power of ideas has done as much as anything to move the consortia into leadership roles. As noted earlier, when the consortia were first established, national standards and curricular frameworks were receiving significant attention; state and local groups needed help in putting these new ideas into practice, and the consortia were right there with knowledge and resources. For example, one consortium developed a presentation given across its region and nationally on “Using Research to Improve Mathematics Teaching and Learning.”

Work with other people’s agendas. Particularly in the early stages, you can win friends and influence people by responding to *their* priorities, even when those priorities are not exactly what you had in mind. As an example, during the first year of operation, staff from one consortium was invited to a number of meetings purely to observe. Though observing was not the role the consortium sought, staff members attended every meeting, listened quietly, and maintained a low profile while making informal contacts during session breaks. At the next round of meetings, the consortium was invited to take a much more active role.

No matter how well established you become, never stop asking your constituents what they need and want. One key to the consortia’s success is that almost all activities, from regional forums to intensive professional development, are planned and designed with extensive input from those who will be participating in the activities.

Offer what people want and what they need (be both strategic and responsive). As you begin to build working relationships with constituents, it should become more and more possible to find ways of addressing their needs while, at the same time, introducing ideas and approaches that may not yet be on their horizon but that you know to be valuable and relevant to their circumstances. For example, one consortium was routinely asked to make presentations on reform topics at state and regional conferences. Consortium staff accepted every possible invitation — as long as they were offered enough time and appropriate logistical arrangements to make their sessions hands-on. This gave the consortium personnel opportunities to introduce instructional approaches through modeling them as they presented.

Be flexible. It is important to have clear guidelines for allocating resources and assigning staff time, and your constituents will want assurances that your services are distributed equitably. At the same time, be sure to allow enough flexibility to respond to emergencies and to address the varied circumstances of different state and local stakeholders. Sometimes you'll need flexibility in major elements of your service plan, not just details. For example, one consortium's plan of operation called for establishment of a team of mathematics and science educators in each state to design services in that state and to serve as a forum on mathematics and science issues. As it happened, a National Science Foundation Statewide Systemic Initiative (SSI) was funded shortly after the consortium. The SSI director was concerned that a consortium state team could pose perceived and actual conflicts, so the consortium agreed to operate all activities through the SSI and forgo having its own group in that state.

Particularly in the early stages, you can win friends and influence people by responding to their priorities, even when those priorities aren't exactly what you had in mind.

As constituents' priorities and personnel change, you will also find yourself faced with the need to adapt or risk losing your investment. For example, one consortium had been working with a particular school as part of its middle school mathematics project. Consortium staff worked with teachers to develop a plan for adapting the local curriculum to reflect reform-based

approaches. But then the principal, responding to other outside pressures, purchased new mathematics curriculum materials for all the middle grades at the school without consulting the teachers or the consortium. Consortium staff members tossed out their original plan and helped the teachers find useful ways of working with the new curriculum.

Get more selective as you go along. As you become established within your service region, and as requests for assistance increase, you will find it necessary to become more selective in choosing your collaborative service opportunities. Making the most effective choice is not always easy. At the local level, if a school or district is already involved in multiple partnerships or reform efforts, there will likely be little room for true collaboration. However, schools or districts with high needs but no strategies already in place for addressing them often represent a high-risk venture.

The consortia have learned, through difficult experience, to consider not only the degree of need but also the vision and commitment of constituent groups. To reap the most mutual benefits, partnership activities need to be clearly related to mutual goals and priorities; it also helps to have links to other reform initiatives. For local school improvement projects, activities should fit clearly into the school or district's overall improvement plan. Otherwise, they run the risk of being treated as an elective, add-on program that can be easily shelved when the next innovation comes along. For example, work with school sites is often co-developed, not an outgrowth of a consortium's agenda. The focus is on the areas that are highest priority for the client schools and customized technical assistance is provided to address those needs.

How

Take it slow. As noted earlier, it is useful to start by addressing small needs as a way of growing relationships and building trust. For example, the consortia's middle school mathematics initiative

started with a one-year commitment. Though one year is rarely enough time for new instructional approaches to take root in the classroom, this short-term commitment allowed both school and consortium staff to assess the program’s fit with local priorities before making a longer-term commitment. This commitment was revised based on experience with the sites, and in most cases, intensive site work continued in the same locations for three to five years in order to build stronger relationships and increase the likelihood of more lasting changes and improvements.

Understand the local context and local protocols. Knowing your audience and tailoring procedures, communication patterns, and activities accordingly is critical to success in collaboration. The consortia have had to address numerous differences in regional, state, and local contexts. In a state where the state education agency directly controls schools and instruction, the tasks of building relationships and addressing gaps in services are quite different from those in another state. As an example, one consortium established “training regions” within each of the states it served, with each region providing input regarding teacher training needs and desired formats. The consortium used existing political divisions within each state to set up the training regions. In one state where intermediate education agencies were significant service providers, the consortium used the state’s eight service center regions. In another state in which school districts valued their independence from the state education agency, the consortium used the state’s eight superintendents’ regions. In each case, the consortium took advantage of political divisions with which stakeholders were familiar and comfortable.

As another example, consortia work with each of their region’s state departments of education. This allows them to support and reinforce each state’s emerging and long-term priorities. In one state, the current priority may be a focus on new state science assessments, while in another state, it could be to develop a statewide system of support for schools not making Adequate Yearly Progress in mathematics.

To reap the most mutual benefits, partnership activities need to be clearly related to mutual goals and priorities.

Communicate. The literature on collaboration emphasizes communication as both vitally important and inherently difficult—a learning reflected in the consortia’s experience as well. As Huxham (1996) points out, “There are *inherent* communication difficulties which *will* underlie all collaborative situations. It has also been suggested that there can be real and not easily reconcilable differences in aims. For these reasons, collaborations, at best, tend to need to spend unusual amounts of time in reaching understandings and agreements compared to other situations.”

It is important to maintain both formal and informal communication channels. Significant conversations—discussions of plans or commitments, for example—should always be followed with written confirmation. The consortia use memoranda of understanding as a tool for communicating commitments and expectations, even for short-term partnership activities. As one consortium has noted:

Through written partnership agreements, roles and responsibilities are clearly delineated... Such an agreement provides structure, stability, and commitment to the ongoing work of collaborating.

Be efficient. Lack of time is consistently noted as a major concern in the literature on collaboration (Dombro, et al., 1996; Driscoll, Boyd, & Crowson, 1997). The people who need to be involved in your work will invariably be those who are already busy with reform agendas; never waste their time. When you meet with them one-on-one, don't "wing it." Plan ahead. Try to schedule conferences and advisory board meetings in tandem with other trips your partners must make. Set a realistic agenda and take care of business within a day and a half.

Professional development sessions may require a different sort of efficiency, including breathing room for teachers to absorb and reflect on their new experiences. New instructional approaches cannot be taught in a day and a half, but you can schedule trainings in smaller chunks, with time in between for teachers to try out their ideas in the classroom.

Be interactive—give voice to others. You have involved your partners in planning your collaborative activities; now engage all participants in those activities. It has become a truism that professional development needs to model the instructional approaches it seeks to impart to teachers. Effective professional development experiences use or model with teachers the strategies teachers will use with their students. For example, they start where teachers are and build from there; provide ample time for in-depth investigations, collaborative work, and reflection; and connect explicitly with teachers' other professional development experiences and activities.

The goal of these experiences is to engage teachers in firsthand learning of what they are expected to practice in their classroom—guiding students through inquiry-based science or mathematics activities (Loucks-Horsley, Hewson, Love, & Stiles, 1998). The consortia have found that even sizeable conferences can be interactive and "hands-on." One consortium, for example, sponsors an

annual forum for more than one hundred regional stakeholders. Every session of the day-and-a-half meeting is interactive, with activities ranging from role-alike planning sessions to actual mathematics and science lessons. Another consortium sponsors a professional development academy in which staff developers, administrators, and lead teachers solve problems and develop their own plans of action. Participants share an equal voice in the planning, topic focus, and agenda of the individual sessions.

Deliver on promises. Making good on your commitments is the bottom line in collaborative work. Your partners must know that they can rely on you to deliver what you promise, when you promise, and with high quality. This commitment is the hallmark to all consortia activities. And delivery is tested through rigorous evaluation. Consortia activities are assessed against a set of performance standards, with benchmarks set for the intended qualities and impact of the consortia services.

Making good on your commitments is the bottom line in collaborative work.

Addressing “Deep Structure” Issues

Some of the literature on collaboration discusses “deep-structure” issues, that is, problems that are deeply entrenched and highly resistant to change. The consortia’s experiences verify the challenges inherent in many of these “deep-structure” issues. Most significant for the consortia’s work have been problems related to institutional resistance and related turf issues; diversity and the power imbalances often hidden within differences in race, culture, and class; competence; and change or turnover, among both people and priorities.

Institutional resistance to change is one of the biggest barriers faced by collaborative groups. Most institutions are slow to relinquish any degree of autonomy, to commit significant resources to an entity beyond their direct control, or to change entrenched policies and procedures. Moreover, members of collaborative groups generally are accountable to (and rewarded or punished by) the individual agencies they represent (Crowson & Boyd, 1996; White & Wehlage, 1994). Such institutional resistance is one reason to recommend the consortia’s cumulative approach to collaboration, as opposed to establishing a discrete collaborative group that requires extensive buy-in and loss of autonomy for its members. But the consortia, too, have felt the effects of agencies’ inertia, including, on occasion, the institutions in which they themselves are housed.

School systems are often described as deeply entrenched and resistant to the changes needed for effective collaboration (Mawhinney, 1996). In the consortia’s experience, schools and school districts at once seek change and resist it. Again, there is no ready solution, but “evolution, not revolution” and “nice and easy does it” are useful reminders that pushing for sweeping changes often results in a backlash that stifles any change at all. One school wrote about its relationship with a consortium:

Our school district has received tremendous support from the Regional Alliance [Consortium] over the past three years as an intensive Alliance School site. When we were looking to adopt a new, standards-based math curriculum, the Alliance sent us to workshops that gave us a first-hand look at several math curriculum materials, and then prepared a cohort of teachers and staff developers in our district to train the rest of the teaching staff in using and evaluating the Investigations curriculum we adopted. Our staff developers and trainers brought back ideas about what needs to be done in the classroom to effectively get students to understand mathematics.

Differences in race, culture, and class, and a lack of understanding as to how to bridge those differences, can significantly hinder collaborative work. One recent review of the literature on collaboration (SEDL, 1998) notes, “It is... important to consider the ways in which institutions—and the interpersonal networks that function within and support them—help to perpetuate differences based on race, culture, and class. Issues of diversity are not merely a matter of addressing individual values and beliefs; they remain one of the most difficult and pervasive ‘deep-structure’ issues” (p. 29).

As noted earlier, the consortia have found that assuring diversity among all its participants, from staff members to advisory boards to participants in collaborative service activities, is critical to maintaining credibility with stakeholder groups, as well as to being effective in addressing this country’s educational improvement needs. At the same time, some constituents—including, at times, those in key, influential positions—rank diversity low on their list of concerns. In these cases, consortia staff must make extra efforts to assure that all groups have a voice in the consortia’s plans and priorities.

Concerns related to *competence* are not often discussed in the literature (SEDL, 1998); however, they have a major impact on program effectiveness and collaborative relationships. In most cases, the consortia have had to take their partners as they have found them, with little opportunity to make specific demands regarding knowledge or competence. One partial solution is to make room on advisory boards, in forums, and in other consortia activities, not only for representatives with the necessary clout and connections, but also for individuals who are knowledgeable about reform topics and approaches.

Changing leadership, changing legislative mandates, and changing funding patterns can all impact collaborative work.

Finally, as noted earlier, *turnover* among individuals and *changing conditions* significantly impact the work of building collaborative relationships that support educational reform. Changing leadership, changing legislative mandates, and changing funding patterns can all impact collaborative work and can require responses ranging from minor programming adjustments to canceling or revamping a project completely. The high rate of turnover among teachers and local administrators is perhaps the most difficult challenge the

consortia continue to face. Again, ready solutions are in short supply; the only thing staff can do is to expect the turnover and be as prepared as possible to deal with its consequences. For example, over the summer in one district, there were administrative changes in four of the six schools as well as the assistant superintendent, who was the consortium liaison. Before the start of school, consortium staff met with the new administrative team to discuss continuity and returned again a month later to finalize plans for the school year.

To Collaborate or Not to Collaborate

Is collaboration worth it? The research literature is clear; collaboration takes more time and effort than simply getting the job done yourself. For the regional consortia, however, the choice has been simple, and not merely because of the authorizing language in their legislation. For the consortia, the *only way* to get the job done has been to collaborate, and the same is likely to be true for the next generation of reform-focused projects. As one consortium director summed things up, “The strength of good educational ideas depends on relationships.” Or as Allen Stonecipher from the Florida Governor’s Commission on Education concluded, “The better systems work together, the better off our children will be” (SERVE, 1999).

This document has discussed the extensive experience of the Eisenhower Regional Consortia in building collaborative relationships with the purpose of school improvement. Collaboration has been a principal strategic approach of these consortia. Their experience provides evidence that working through collaborative relationships takes longer and may be harder than “doing it alone.” However, the benefits of such relationships in enriching the partners and unleashing new powers to provide services make the effort worthwhile. In facing the challenges inherent in meeting the needs of all children, those who would help schools to improve must work together.

References

Consortia and U.S. Department of Education documents

Buckley, P.J. (2000, December). *Final report: Eisenhower Regional Consortium for Mathematics and Science Education at AEL*. Arlington, VA: Appalachia Educational Laboratory.

Eisenhower Mathematics and Science Consortia and Clearinghouse Network. (1999, May). *Evaluation of service delivery and impact for FY1998*. Aurora, CO: E=MSC² Evaluation Committee.

Eisenhower Regional Alliance for School-based Mathematics and Science Reform. (2001). *Final performance report, October 1, 1995–September 30, 2001*. Cambridge, MA: TERC.

Eisenhower Southwest Consortium for the Improvement of Mathematics and Science Teaching. (n.d.). *Cumulative report for FY96-00*. Austin, TX: Southwest Educational Development Laboratory.

Humphrey, D., Riehl, L., & Young, V. (2000). *Cumulative findings from the evaluation of the Eisenhower Regional Consortia Program*. (Contract No. EA9600961, Task Order #25). Washington, DC: U.S. Department of Education, Office of the Under Secretary.

Midwest Consortium for Mathematics and Science Education. (2001). *Final grant report: 1995-2000*. Naperville, IL: Author.

Mid-Atlantic Eisenhower Consortium for Mathematics and Science Education. (2001, January 31). *Final grant report, 1995-2000*. Philadelphia: Research for Better Schools.

Office of Educational Research and Improvement. (n.d.). *Lessons learned: collaboration and networking 1995-2000*. Unpublished report. Washington, DC: U.S. Department of Education.

Office of Educational Research and Improvement. (1998). *The annual report of the Eisenhower Mathematics and Science Consortia and Clearinghouse, 1998*. Washington, DC: U.S. Department of Education.

Southeast Eisenhower Regional Consortium for Mathematics and Science Education @ SERVE. (2001, December). *Five-year summative report*. Tallahassee: SERVE.

WestEd Eisenhower Regional Consortium for Mathematics and Science Education. (2001). *Five-year report*. San Francisco: WestEd.

References from the literature on collaboration

American Association for the Advancement of Science. (1989). *Science for all Americans*. Washington, DC: Author.

Crowson, R.L., & Boyd, W.L. (1996). Structures and strategies: Toward an understanding of alternative models for coordinated children's services. In J.G. Cibulka & W.J. Kritek (Eds.), *Coordination among schools, families, and communities: Prospects for educational reform* (pp. 137-169). Albany, NY: State University of New York Press.

Dombro, A.L., O'Donnell, N.S., Galinsky, E., Melcher, S.G., & Farber, A. (1996). *Community mobilization: Strategies to support young children and their families*. New York: Families and Work Institute.

Driscoll, M.E., Boyd, W.L., & Crowson, R. L. (1997). Collaborative services initiatives: A report of a national survey of programs. In G.D. Haertel & M.C. Wang (Eds.), *Coordination, cooperation, collaboration: What we know about school-linked services* (pp. 49-88). Philadelphia: Mid-Atlantic Regional Educational Laboratory.

Elmore, R. (1996). Getting to scale with good educational practice. *Harvard Educational Review*, 66(1), 1-26.

Epstein, J.L. (1995, May). School/family/community partnerships: Caring for the children we share. *Phi Delta Kappan*, 701-712.

Himmelman, A.T. (1996). On the theory and practice of transformational collaboration: From social service to social justice. In d. Huxham (Ed.), *Creating collaborative advantage* (pp. 19-43). London: SAGE.

Hord, S.M. (1986, February). A synthesis of research on organizational collaboration. *Educational Leadership*, 22-26.

Huxham, C. (1996). Collaboration and collaborative advantage. In C. Huxham (Ed.), *Creating collaborative advantage* (pp. 1-18). London: SAGE.

Intriligator, B.A. (1992). *Establishing interorganizational structures that facilitate successful school partnerships*. Paper presented at the 76th Annual Meeting of the American Educational Research Association, San Francisco, April 20-24. (ERIC Document Reproduction Service No. ED 347 692).

Loucks-Horsley, S., Hewson, P.W., Love, N., & Stiles, K.E. (1998). *Designing professional development for teachers of science and mathematics*. Thousand Oaks, CA: Corwin Press, Inc.

Mattesich, P.W., & Monsey, B.R. (1992). *Collaboration: What makes it work. A review of research literature on factors influencing successful collaboration*. St. Paul, MN: Amherst H. Wilder Foundation.

Mawhinney, H.B. (1996). Institutional effects of strategic efforts at community enrichment. In J.G. Cibulka & W.J. Kritek (Eds.), *Coordination among schools, families, and communities: Prospects for educational reform* (pp. 223-243). Albany, NY: State University of New York Press.

Melaville, A.I., Blank, M.J., & Asayesh, G. (1993, April). *Together we can: A guide for crafting a profamily system of education and human services*. Washington, DC: U.S. Department of Education and U.S. Department of Health and Human Services.

McLaughlin, M.W. (1990, December). The Rand Change Agent study revisited: Macro perspectives and micro realities. *Educational Researcher*, 11-16.

National Council of Teachers of Mathematics. (1989). *Curriculum and evaluation standards for school mathematics*. Reston, VA: Author.

National Council of Teachers of Mathematics. (1991). *Professional standards for teaching mathematics*. Reston, VA: Author.

SERVE. (1999). *Coming together: Collaboration as a tool for change*. Greensboro, NC: University of North Carolina at Greensboro.

Southwest Educational Development Laboratory. (1998). *Issues in collaborative work*. Austin, TX: Author.

U.S. Department of Education. (1996, May). *Putting the pieces together: Comprehensive school-linked strategies for children and families*. Washington, DC: Author.

Wang, M.C., Haertel, G.D., & Walberg, H.J. (1997). The effectiveness of collaborative school-linked services. In G.D. Haertel & M.C. Wang (Eds.), *Coordination, cooperation, collaboration: What we know about school-linked services* (pp. 3-19). Philadelphia: Mid-Atlantic Regional Educational Laboratory.

White, J.A., & Wehlage, C. (1994, January). *Community collaboration: If it is such a good idea, why is it so hard to do?* Madison, WI: Center on Organization and Restructuring of Schools, University of Wisconsin-Madison.

Winer, M., & Ray, K. (1994). *Collaboration handbook: Creating, sustaining, and enjoying the journey*. St. Paul, MN: Amherst H. Wilder Foundation.