February 3, 1994

IMPLEMENTING CHANGE IN EDUCATIONAL QUALITY[1]

Don Adams

with Thomas Clayton, Michel Rakotomanana, and Yidan Wang

The educational planning and policy-making efforts for most countries until recently gave little attention to problems of implementation. Throughout the 1950s, 1960s, and early 1970s, implementation often was not formally planned, responsibility for implementation was assumed to lie exclusively with lower-level administrators and managers or with those whose everyday work actually was affected by the intended change, and the failures of implementation were defined as any level of departure from the original objectives. However, during the late 1970s and 1980s there was rapid growth in the perception of failure of educational reforms and innovations in educational and other sectors with the result that concern for the implementation of programs and projects at all levels from the classroom to the national system has increased radically.

The experience of the 1960s and 1970s demonstrates that implementation does not automatically follow the development of educational plans and policies. The planned improvement of education requires information and knowledge of the organizational and environmental contexts, insights into the behavior of implementers, and understanding of such processes as needs assessment, monitoring, adapting, evaluating, and mobilizing support for the innovation. This

---

[1]This paper is a reduced version of a much longer working paper produced under the United States Agency for International Development's Improving Educational Quality Project.

BEST AVAILABLE COPY

paper draws on U.S. and international research including the field work of the authors to analyze the models, strategies, and processes used in implementing educational reforms and innovations. The emphasis is primarily on attempts at the improvement of educational quality at the classroom and school levels. The first section of the paper examines a general model of implementing educational change. The second section concentrates on the supporting conditions, strategies, and operational activities for initiating and sustaining change.

A GENERALIZED MODEL OF IMPLEMENTATION

Although theoretically framed research on implementing educational change is still limited and good cross-national studies even more rare, a rapidly growing body of conceptual explorations, reflective analyses, and empirical research and evaluation efforts integral to educational reform now is available. The new insights resulting from research and practice, although helpful in avoiding some earlier mistakes, cannot provide prescriptions for those guiding the implementation process. The enthusiasm and optimism which often accompany the initiation of educational reforms and innovations all too often are followed by frustration at the inability to translate policies and programs fully into practice. Concern with implementation failure persists in the 1990s, and attempts to transfer insights from one innovation experience to a new case of implementation frequently have been unsuccessful.

One aspect of the difficulty in achieving successful implementation lies in

the conceptualization of implementation. Earlier views equating implementation to adoption emphasized the importance of clearly developed plans backed by legitimate decision-making authority as typically represented in efficient bureaucracies. The key to adoption was assumed to lie in control and compliance authority and detailed procedures. Implementation seen as a bureaucratic or tightly managed process thus focused on specification of responsibilities and standards and an efficient monitoring system.

More recently, implementation tends to be seen as effecting change or carrying innovations or reforms into practice, with or without a formal "plan." Such a view suggests that implementation may be defined as the introduction, continuation, and, perhaps, the institutionalization of change. To many observers, the key to full and lasting implemented change lies not with strict hierarchies of authority and rigid routines of operation, but with building and maintaining acceptable, satisfying human relationships. Attaining such conditions focuses more attention on the individual-in-context and the need for shared decision making, and it may require acceptance of the notion of continued adjustments during the implementing processes.

Planning Educational Change

By examining broadly the research on policy and program implementation, it is possible to build a loose conceptual foundation for implementation planning. This framework (Figure 1) is not intended to provide a checklist of necessary conditions for implementation success. It does provide a general lens for viewing

a wide range of educational reforms and innovations and is suggestive of basic questions which need to be considered in planning and monitoring change. These factors were identified from the authors' experience and research and in a review of Berman (1980), Berman (1981), Cerych, Ladislav, and Sabatier (1986), Elmore (1983), Hargrove (1983), Mazmanian and Sabatier (1983), McLaughlin (1987), Pressman and Wildavsky (1984), Rondinelli, Middleton, and Verspoor (1990), Sabatier and Hanf (1985), and Williams (1980).

Figure 1. Factors Associated with Implementation

1.0 POLICY OR INNOVATION FACTORS

- a. Validity of Causal Theory
- b. Clarity, Specificity, and Flexibility
- c. Degree of Change and Complexity

2.0 CONTEXT FACTORS

- a. Organizational Setting
- b. External Environment
- c. Resources
  - c. 1. Financial Resources
  - c. 2. Incentives and Sanctions
  - c. 3. Staff Competence

3.0 INTERVENTION FACTORS

- a. Information, Knowledge, and Technology
- b. Authority and Power
- c. Communication and Participation
- d. Individual Perception, Motivation, and Action
- e. Time

Figure 1 identifies a number of factors drawn largely from the general literature on implementation which are purported to influence, and hence help

understanding of, the implementation process. It should be emphasized that the review of international studies and experience which forms the basis for Figure 1 comprises a rather unsystematic body of research, analyses, and intuitively appealing insights of a large number of scholars and practitioners concerned with questions of implementation. Moreover, as will be discussed later, many of the factors are interpreted differently depending on the theoretical perspective of those who argue their significance. The three sets of factors found in Figure 1 are briefly discussed below.

1. Policy or Innovation Factors

Policy or innovation factors refer to the characteristics of the policy or innovation itself, particularly during the design and adoption stages of the change process. They include factors easily controllable and factors controllable only with great difficulty. There is by no means universal agreement on either the factors or even the direction of their influence.

Validity of causal theory refers to the importance of understanding how the particular change relates to the attainment of the objectives. For example: Does the proposed innovation reflect evidence from a respected body of international research? Is there support from local contextual research?

The variables of clarity, specificity, and flexibility suggest such characteristics as the degree of goal ambiguity, the understandability of orders and guidelines, and the amount of adjustments in objectives and programs which are allowed implementers. Clarity and precision of goals and objectives are

considered vital by advocates of some planning models. However, others have argued that lack of clarity and precision, by masking potential disagreements, may contribute at least initially to consensus on the necessity of the change in question and thus increase its support.

The degree of change and complexity refers to the magnitude of the departure of the innovation from the status quo, the number of objectives, roles, actors, decision points, and the extent of interdependence of organizations. Linear, expert-driven approaches to planning seek to reduce complexity, often by ignoring variables or by developing quantifiable indicators; but political and consensual approaches tend to accept complexity as a given. Although there is general agreement as to the importance of these factors, there is disagreement on the particular ways in which they affect implementation. Some observers have found that projects requiring significant change from traditional roles or organizational patterns are less likely to succeed. Likewise, the scope and complexity of change are often assumed to constrain implementation success. However, in some contexts, major changes apparently create more enthusiasm, energy, and commitment among implementers.

2. Context Factors

To implement organizational change, new patterns of work behavior may need to be developed and new relations may need to be established with the environment. Much about the internal workings and external linkages of educational organizations remains unclear. The persistently popular metaphor

which depicts education as a loosely coupled system suggests fuzzy lines of internal communication and complex, often non-hierarchal decision processes.

Moreover, the direct and subtly indirect ways in which the politics, economy, and culture of the external environment provide or withhold support for educational change often is unclear. For example, both highly turbulent and highly stable environments appear to be detrimental to implementing change. And, a long-standing debate persists as to whether major educational changes must originate in the external environment or may evolve from the internal dynamics of the educational system. Does the environment impose change on passive schools? Or have we radically underestimated the capacity of the educational system for autonomous change?

Resources, including fiscal and human resources, incentives, rewards, and sanctions, are the factors perhaps most frequently cited in the implementation literature as affecting implementation success or failure. Given limited resources and goals that are often irreconcilable, all interests cannot be pursued simultaneously. Resources serve not only as the direct means in buying new equipment, paying additional personnel, and so forth, but they also encourage compliance because of the prospect that those involved in implementation may obtain a share of the benefits. Thus, resources may create a demand by individuals and groups for participation in, or support for, a new program or innovation. However, fiscal resources alone are rarely sufficient to guarantee implementation success. There are, for example, technical difficulties in the

timing and coordinating of resources if programs change directions. Moreover, in some educational reforms in the United States, it has been suggested that the lure of additional funds may distort planning and implementing change by attracting persons to the change process who do not agree with the objectives of what is planned, but perceive that resources can be used for their individual needs or other social goals.

3. Intervention Factors

Reliable information about the change being planned, the particular educational system, and the relevant external environment is the foundation for implementation planning. The knowledge and information needed may include knowledge of the formal and informal organization of the system, technical knowledge about the innovation itself, knowledge of the implementation process, and knowledge to shape new routines and cope with evolving problems. Adequate information, however, is rarely available in readily interpretable form and may be available or obtainable only with the expenditure of considerable time, effort, and expertise.

Authority is based on position in relation to others, while power (also relative and usually variable) is based on possession of valued resources such as information, prestige, status, competence, or expertise. Power both accompanies authority and exists independently of official position (e.g., the power behind the scene or throne). In some situations, the power of social groups can mitigate the authority of education personnel, as when religious organizations challenge the

schools' use of particular textbooks that they find objectionable.

The significance of communication and participation is given recognition in all planning models. However, two kinds of arguments are made by planning and policy theorists in support of participation. The first, or conceptual argument, is associated with the view of planning as an interactive, political, "social learning" or consensual process. Within these contexts, participation of all major groups is necessary because each group contributes its own knowledge and insights, involvement is an integral part of the process of making educational decisions and choosing between educational alternatives. The second type of argument links participation to planning effectiveness. The belief among planners appears to be widespread that often participation is necessary if implementation is to be successful. Particularly in centrist models, participation, at least at the lower administrative levels, is associated with willingness and ability to carry out specified routines.

Participation of those involved in, or affected by, planned educational change can take several forms differing in level, scope, and impact. These include dissemination of information, open meetings, advisory committees, and polling, or voting (e.g., needs assessment, feedback surveys). Participation can provide information, ideas, and perspectives that might not otherwise be available, a basis for consensus building and commitment, and a vehicle for individual and organization learning (i.e., capacity building). It can also slow the implementation process and provide an opportunity for opponents to dilute or obstruct change.

Consequently, it is not unusual to find community or user participation in implementation planning confined to minor matters or filtered through bureaucratic apparatus so as to minimize its potential disruptiveness. Such tokenism, for example, has been observed in federally sponsored educational change efforts in the United States (Adams, Cornbleth, & Plank, 1988).

The importance of implementers' perceptions, motivation, and actions is increasingly being recognized in the literature of educational change and reform. All models of planning and implementing educational change involve decisions taken by individuals or by groups of individuals. It could thus be argued that studying the cognitive process by which individuals collect, interpret, and use information and researching the sources of individual motivation should be important aspects of implementation research. Ultimately, the extent, timing, and form of implementation rests to a significant degree on individual motivation, decision, and action. Educational reforms and innovations are designed as intentions directed toward and realized through individual and group action. Policy makers, planners, and administrators intend to influence individual action consistently and usually repetitively. Those planning educational change may also seek to prohibit certain types of individual action, alter roles and relationships which in turn influence individual actions, and prescribe training which seeks to change the pattern of individual action.

IMPLEMENTING CHANGE IN EDUCATIONAL QUALITY AT THE CLASSROOM AND SCHOOL LEVELS

U.S. and international research on implementation of qualitative educational innovations at the classroom and school levels identify and further focus many of the factors found in Figure 1. The original and secondary research efforts of such scholars as Bauchner, Eiseman, Cox, and Schmidt (1982), Huberman (1982), Loucks and Cox (1982), and Sirotnik and Oakes (1986) provide a summary of implementation studies associated with major school improvement efforts in the United States. The several from the International School Improvement Project publications identify the factors which constrain and support attempts at qualitative school reforms in Europe. Rondinelli, Middleton, and Verspoor (1990) and Fuller (1986), among others, have examined internationally the in-school and out-of-school factors which influence the success of planned educational change.

Box A, drawing from substantial but fragmented and often not directly comparable cases of research, provides a summary of factors discovered to contribute to success of classroom and school reforms. These factors typically are a combination of insights identified by researchers and perceptions of practitioners or various educational experts. At minimum, such a list helps enrich discussions about improving educational quality. Only in the most tentative of ways is it suggestive of strategic and operational decisions.

There is no clear distinction between implementing qualitative improvements at the classroom and school levels. As Crandall, Bauchner, Loucks, and Schmidt (1982) note: "The difference between pedagogic and organizational innovations is somewhat artificial and difficult to decouple" (p. 13). School-level outcomes are influenced by instructional and classroom practices and vice versa. Traditionally, in empirical U.S. educational research, a pedagogic focus on classroom activities has received more attention than an organization focus. Moreover, research at the school level appears often to be "softer," i.e., less rigorous, than classroom research.

This section focuses on key aspects of the implementation process at the school and classroom levels: initiating change, sustaining and institutionalizing change, and developing strategies to guide these change processes.

Initiating Change

The literature on improving educational quality at the classroom, school, and system levels often distinguishes the separate but overlapping and nonlinear stages of initiation, implementation, and institutionalization. These stages are themselves embedded within the internal and external environments of the change process, the chosen model(s) of planning educational change, and the individual styles and perceptions of implementers.

Regardless of the scope and focus of the initiation phase, information provides the necessary foundation for choices of action. An information and knowledge base must include an understanding of both organizational properties

Previous Page Blank

and management strategies. Such instruments as sector analyses, school reviews, and ad hoc needs assessments provide basic information inputs. Research during the initiation phase is expected to contribute directly to decision choices and also may have symbolic functions. Depending on the allegiances of the researchers, it also may unfortunately be used to legitimate maintaining the status quo. Research supports, and in turn is supported by, information systems which, however defined, are foundational to comprehending the existing state of the classroom and school, and to engaging in informed discussions about available strategies for initiating change.

Sustaining and Institutionalizing Change

Institutionalization is a broad, abstract concept implying stabilization and continuation of the change. It has been called a process by which an organization assimilates or integrates an innovation into its structure. Its goal is sustained improvement of an organization (Verspoor, 1989). Institutionalization may be viewed in terms of "structuralist" and "behaviorist" perspectives. Structuralist reforms could include, for example, changes in institutional functions or in interinstitutional or interindividual relationships. Behaviorist reforms include adjustments in the cultural characteristics or the "climate" or the educational process. Institutionalization is typically seen as taking place within organizational settings, e.g., classroom, schools, or systems.

Continuing and Sustaining Improvement in Quality

Sustaining qualitative changes in classrooms and schools depends on the ability to generate, understand, and utilize information on evolving intervention, performance, and contextual conditions. The information, arguments, and incentives useful to initiate change may not be those which are effective in ensuring its continuation. A few influential and committed individuals may have been sufficient to introduce the new practices; however, sufficient resources, sound planning and development activities, efficient information networks, strong individual commitment, and continually improving technical skills are likely to be necessary during the continuation phase.

Observers of attempts to implement innovations, for example, note that early enthusiasm may rapidly give way to despair as the difficulties and risks become known. The challenge is how to maintain high performance and high morale on the part of those involved. This "dip" in the curve of implementation may be temporary, and, with further understanding and confidence, commitment may reemerge. However, the decline in the intervention support may continue and result in the termination of the innovation.

The instability of changes in quality over time may, of course, reflect a healthy process of naturally occurring school improvement. Irrespective of shifts in motivation and morale, there may be good reasons why innovations which are satisfactory at a particular time may not be appropriate or acceptable at a later time. (Educators in the United States are now beginning to observe that the

effective schools for the 1980s may not be adequate to be effective schools for the 1990s). New research- or experience-based knowledge may suggest foci on different classroom variables. A shift in national, local, and school priorities may require consideration of altered teacher and administrator roles and of new output measures.

Continuation of new classroom practices implies that a school assimilates an innovation into the role and relationships of the teachers and administrators. The modifications are stabilized and the school effectively establishes an institutionalized process of monitoring and feedback which includes continued assessments of the classroom changes and their effects. The culture of the school and classroom has been altered. The definition of continued change requires the insights and reflections of practitioners and reliance on the linking of ongoing classroom research to practice.

That perception of the occurrence of institutionalization should vary among the actors involved in the change process is not surprising. Understandably, teachers emphasize the importance of practice-specific mastery. Teachers as the group "closest to the action" could be also expected to see most clearly the weaknesses in a new practice. Administrators, from their vantage point somewhat removed from the classroom and focussing on management concerns, are more willing to accept plans and commitments as sufficient evidence of institutionalization.

Major improvements in education often take several years and require multiple technologies and a variety of strategies. The "miracle grain" phenomenon of a single technology or strategy having rapid and long-term impact is unlikely to occur in educational improvement projects at the classroom and school levels. Moreover, improving educational quality by a "checklist" approach focussed on a number of discrete classroom modifications is unlikely to be fully satisfactory. The institutionalization of innovations typically requires an integrated approach which may include supporting organizational change, developing new decision processes, engaging in sustained, but flexible, participatory evaluation, and creating effective feedback mechanisms.

Developing Strategies

A strategy is a general guide for institutions and personnel that provides organized direction for efforts to implement qualitative changes at the classroom and school levels. Strategies are built on implicit or explicit assumptions about which conditions and organizing principles embedded in successful change efforts are important. Strategies thus may reflect causal or predictive theories of planning or organizational change, but are more likely to reflect "middle-level" generalizations, propositions, or hypotheses about educational change.

Although at times partly obscured by other language, the twin, sometimes conflicting, strategies of capacity building and accountability, if broadly defined, include most of the more specific strategies identified in international research. Boxes B and C identify many of the actions or programs which fall under these

two headings. The models of planned educational change examined earlier provide perspective on this two-fold classification. By way of example, planned capacity building following the assumptions of a formal expert-driven model of planning would tend to be a top-down process, strongly information based and assessed in rigorous terms of cost efficiency. By contrast, planned capacity building following a view of planning as politics would reflect bargaining and power struggles around major decisions.

The choice and perhaps even the design of a particular strategic program or action may be the result of professional or political considerations or some combination of both. The decisions may be expert driven or participatory and collaborative. In practice, capacity-building efforts are more likely to involve high levels of cooperation among teachers, administrators, and parents than accountability strategies. The latter more often follow the bureaucratic hierarchy with relatively less attention to shared decision making. Some strategies, depending on intent and design, could fit under both headings.

Box B. Capacity Building

A. CAPACITY BUILDING:

1. **School Administration and Teaching:**

Administrators' Training

Preservice training
Inservice training
Periodic inservice seminars
Target population: key administrative and professional staff, principals

Teacher Education

Preservice teacher training
Permanent/local/inservice teacher training
Direct/local supervision and support for teachers
"Echo" or "Cascade" training for teachers
Target population: teacher trainers, research and evaluation staff, teachers and assistant teachers

2. **School Organization:**

School Management

Delegation of authority to principals/school managers
Development of school improvement funds

Staff Development

Collective development programs for career leaders
Leaders competence development, if needed jointly with other staff
Opportunities for professional staff development
Staff development program with clear system for assessing performance

Staff Working Conditions

Improvement of teachers' working conditions
Incentive systems: e.g., fellowships for school managers
Teachers' active participation to the reform
Provision of instructional materials and equipment

Teaching Organization

Reorganization and sequencing of curriculum
Adjustment of time allocation
Use of learning packages
Cluster schools
Multiple shifts and multigrade teaching
Multigrade classes
Curricular materials adapted to needs of students and to characteristics of communities
Improved school supervision by new tiers of officials
Incentive to female teachers: e.g., boarding, training, more pay

Box C continued

3. **Incentives To Students/Parents:**

Day care to release young girls from schooling
Special incentives to young girls: e.g., free tuition, stipends, housing, books, medical allowance
Before- and after-school tutoring
Outreach programs to encourage disadvantaged children to enroll
Flexible promotion system
Reduction of cost of education for rural children and girls: e.g., eliminating fees, providing instructional materials, boarding, transportation, feeding programs
Reduction of indirect costs to parents: e.g., revising school year or school day (not to coincide with field work), flexible scheduling

4. **Informal Education:**

Interactive radio instruction
Television programs in local language

5. **Community Organization:**

Parent-teachers association
School open house

Box D. Accountability

B. ACCOUNTABILITY:

1. **Communication and Information Within the Educational Bureaucracy:**

Improving vertical communication, regarding: testing of new curricula, monitoring of classroom experience, feedback from teachers, collection of data from teachers.
Creating special institutions: e.g., advisory committee
Improving horizontal communication
Developing information systems at all levels

2. **Development of National, Regional, and Local Testing Programs:**

Strong testing, monitoring, and evaluation system

3. **Development of Evaluation Systems:**

Informal evaluation by program designers, teachers trainers, and teachers, versus formalized monitoring/evaluation
Ad hoc evaluation by program managers
Clustering of schools

4. **Development of Community-Level Accountability System:**

Developing school PR: e.g., training of teachers and firstline supervisors in community relations
School management committee
Parents-teachers association
Involvement of bureaucrats, politicians, school staff, and community leaders in designing and implementing reforms

Each strategy or coordinated combination becomes operationalized through answering certain basic questions. What questions ask for the purpose, objectives, and scope of the improvement strategy. Who questions specify the individuals and organizations involved—if necessary in order of priority. How is answered by adding appropriate detail to the descriptions of the capacity-building or accountability strategy, e.g., identifying which training option or curriculum change. When refers to the planned time frame and may require a breakdown into phases in order to realize more effectively the outputs of the chosen strategy.

SUMMARY

Some educators appear to be increasingly confident that recent research on educational innovation and professional insights growing out of several U.S. and international reform movements offer guidance for planning and implementing new attempts at improving educational quality. The claims are that the obstacles to success and the conditions and processes which make implementation more likely are now better known.

Other educators are more cautious. They suggest that better questions perhaps can now be asked but many are not easily answered. Educational theory is inadequate, it is argued, to explain many causal linkages in the chain of initiating, sustaining, and institutionalizing change. Moreover, each organizational and environmental context has its own unique character, inhibiting the development of any generalized models of success.

Qualitative educational change is a complex process which is difficult to understand, plan, or manage. Although significant progress can be recorded over the last two decades in recognizing the importance of implementation as a key to successful reform, the path from a stated policy or innovation to the realization of new classroom practices is often long and circuitous. There are, however, two especially promising directions in the international research on educational quality: the trend away from a focus on macro policy concerns to examination of innovations at the school and classroom levels; and the shifting of attention from innovation adoption to a concentration on the interaction of multiple actors within and outside the educational system in interpreting and adapting new programs and practices. These trends have resulted in many new insights into the struggles to resist or encourage change and in a more intimate knowledge of organizational and individual behavior.

A more thorough understanding of the necessary and sufficient conditions and processes for improving educational quality may require multiple models to interpret and evaluate behavior in the classroom and school. Much of existing research on improving educational quality has been guided by what might be termed "technical rationality." That is innovators and reformers have assumed that existing information, knowledge, and skills are sufficient to attain specified objectives. A case can be made that understanding the process of educational change requires a supplementary "social rationality" model. More sophisticated models of planning and implementing educational change are needed which place

impediments to, and supports for, change within the internal (organizational) and external (environmental) contexts. The meaning of perceived contradictions, conflicts, and tensions can then be interpreted as part of a specific ongoing social interaction.

REFERENCES

Adams, D., Cornbleth, C., & Plank, D. (1988). Between exhortation and reform: Recent U.S. experience with educational change. *Interchange 19*(3/4), 121-134.

Bauchner, J.E., Eiseman, J.W., Cox, P.L., & Schmidt, W.H. (1982). *Models of change: A study of dissemination effects supporting school improvement*. Andover, MA: Network of Innovative Schools, Inc.

Berman, P. (1980). Thinking about programmed and adaptive implementation: Matching strategies to situations. In H.M. Ingram & D.E. Mann (Eds.), *Why policies succeed or fail* (pp. 205-227). Beverly Hills, CA: Sage.

Berman, P. (1981). Educational change: An implementation paradigm. In R. Lehming & M. Kane (Eds.), *Improving schools: Using what we know* (pp. 253-286). Beverly Hills, CA: Sage.

Cerych, L., & Sabatier, P.A. (1986). *Great expectations and mixed performance*. Great Britain: European Institute of Education and Social Policy.

Crandall, D.P., Bauchner, J.E., Loucks, S.F., & Schmidt, W.H. (1982). *Models of the school improvement process: Factors contributing to success. A study of dissemination efforts supporting school improvement*. Andover, MA: Network of Innovative Schools, Inc.

Elmore, R. (1983). Forward and backward mapping: Reversible logic in the analysis of public policy. In K. Hanf & T.A.J. Toonen (Eds.), *Policy implementation in federal and unitary systems: Questions of analysis and design* (pp. 33-70). Dordrecht, Netherlands: Martinus Nijhoff.

Fuller, B. (1986). *Raising school quality in developing countries: What investments boost learning?* World Bank Discussion Papers 2. Washington, D.C.: World Bank.

Hargrove, E.C. (1983). The search for implementation theory. In R.J. Zeckhauser & D. Leebaert (Eds.), *What role for government? Lessons from policy research* (pp. 280-294). Durham, NC: Duke University Press.

Huberman, M.A., & Crandall, D.P. (1982). *Implications for action: A study of dissemination efforts supporting school improvement*. Andover, MA: Network of Innovative Schools, Inc.

Loucks, S.F., & Cox, P.L. (1982). *School district personnel: A crucial role in school improvement efforts*. Andover, MA: Network of Innovative Schools, Inc.

Mazmanian, D.A., & Sabatier, P.A. (Eds.). (1981). *Effective policy implementation.* Lexington, MA: Lexington Books.

McLaughlin, M.W. (1987). Learning from experience: Lessons from policy implementation. *Educational Evaluation and Policy Analysis, 9,* 171-178.

Pressman, J.L., & Wildavsky, A. (1984). *Implementation* (3rd ed.). Berkeley, CA: University of California Press.

Rondinelli, D., Middleton, J., & Verspoor, A. (1990). *Planning education reform in developing countries: Contingency approach.* Durham, NC: Duke University Press.

Sabatier, P.A., & Hanf, K. (1985). Strategic interaction, learning and policy evolution: A synthetic model. In K. Hanf & T.A.J. Toonen (Eds.), *Policy implementation in federal and unitary systems: Questions of analysis and design* (pp. 301-333). Dordrecht, Netherlands: Martinus Nijhoff.

Sirotnik, K.A., & Oakes, J. (1989). A contextual appraisal system for schools. *Educational Leadership, 39*(3), 164-173.

Verspoor, A. (1989). *Pathways to change: Improving the quality of education in developing countries.* World Bank Discussion Papers 53. Washington, D.C.: World Bank.

Williams, W. (1980). Implementation in perspective. In *The implementation perspective* (pp. 2-9). Berkeley, CA: University of California Press.