

FEDERAL PROGRAMS SUPPORTING EDUCATIONAL CHANGE, VOL. V: EXECUTIVE SUMMARY

PREPARED FOR THE U.S. OFFICE OF EDUCATION,
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PAUL BERMAN, PETER W. GREENWOOD,
MILBREY WALLIN McLAUGHLIN, JOHN PINCUS

R-1589/5-HEW
APRIL 1975



Rand
SANTA MONICA, CA. 90406

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PREFACE

Under the sponsorship of the U.S. Office of Education, Rand is conducting a several-year study of federally funded programs designed to introduce and spread innovative practices in public schools. These change agent programs normally offer temporary federal funding to school districts as "seed money" or "risk capital." If an innovation is successful, it is assumed that the district will continue part or all of the project using other sources of funds, and also disseminate it to other schools in the district, as well as to other districts that may be seeking change. The Rand study examines four such federal programs—Elementary and Secondary Education Act Title III, Innovative Projects; Elementary and Secondary Education Act Title VII, Bilingual Projects; Vocational Education Act, 1968 Amendments, Part D, Exemplary Programs; and the Right-To-Read Program. The study identifies what tends to promote various kinds of changes in the schools and what doesn't; in particular, the Rand study will identify for federal, state, and local policymakers the nature, permanence, and extent of dissemination of innovations that are associated with the various federal programs and with various federal, state, and local practices.

A series of five reports describes the results of the first year of the Rand study (July 1973 to July 1974). Volume I (R-1589/1-HEW, *A Model of Educational Change*) provides a theoretical perspective for the Rand study by analyzing the current state of knowledge of planned change in education and by proposing a conceptual model of factors affecting change processes within school districts.¹

Volume II of the series (R-1589/2-HEW, *Factors Affecting Change Agent Projects*) contains the analysis of survey data collected from a national sample of 293 projects in 18 states during November and December 1973.

Volume III (R-1589/3-HEW, *The Process of Change*) summarizes the results of 29 case studies of change agent projects conducted by Rand staff members and consultants in 25 school districts during April and May 1974. These case studies were chosen from the original sample of 293 projects initially surveyed. Volume III also describes the role of state education agencies in selecting, monitoring, and disseminating the change agent projects.

Four technical appendixes to Vol. III describe in detail the federal program management approach, state education agency participation, and case studies for each of the programs in the study: Title III, App. A; Reading, App. B; Bilingual Education, App. C; and Career Education, App. D. Appendix A should be of particular interest to researchers or practitioners concerned with the introduction of new approaches to classroom instruction.

Volume IV (R-1589/4-HEW, *The Findings in Review*) summarizes the findings of Vols. I, II, and III, and also synthesizes extensive data collected by Rand on federal-level program strategy and management for each of the change agent programs. Volume IV includes a discussion of alternative federal strategies for promoting innovation.

¹ Because of Rand's interest in advancing knowledge of organizational behavior in educational institutions, the research underlying this report was supported in part by an allocation of Rand corporate research funds.

This report, Vol. V, tries to distill the study's methods and results for a general audience.

Subsequent research will collect additional data on Titles III and VII of ESEA, particularly those projects for which federal funding has expired.

ACKNOWLEDGMENTS

A summary of research results is a restatement. In this case the restatement is not solely of our own work but of other people's—a group of colleagues who have collaborated with us in preparing this series of reports. We hope that this summary will lead the reader to the other volumes, where this collaborative effort is set forth in more detail.

Among these colleagues, who worked long and hard on this study, we want to mention particularly Miriam Baer, Pierce Barker, Gail V. Bass, Francois G. Christen, Sinclair Coleman, Peter G. deLeon, Richard F. Elmore, Todd I. Endo, Carol N. Frost, Patricia K. Gowen, Beverly J. Hawkins, Phyllis Kantar, Michael W. Kirst, Dale Mann (who is a co-author of Vol. III), Lawrence McCluskey, Bryant M. Mori, Jerome T. Murphy, Anthony H. Pascal (who was primarily responsible for the career education case studies), Edward W. Pauly (who is a co-author of Vol. II), Linda L. Prusoff, Roger L. Rasmussen, Robert T. Riley, Eric Roberts, Mary Rudolph, Marta Samulon, Kathleen E. Styles, Gerald C. Sumner (who was primarily responsible for the bilingual education case studies), Mary K. Vickers, John G. Wirt (who was primarily responsible for the case studies in reading), and Gail Zellman. We also wish to thank Eleanor T. Gernert and Nancy C. Moll (who edited this manuscript).

P. Michael Timpane and Daniel Weiler have offered critical comments on this volume. Like the others cited above, they bear no responsibility for its defects.

Finally, two staff members of the U.S. Office of Education, Dr. Gerry Hendrickson and Dr. Ann Bezdek, have served successively as technical monitors of this work. Their task has not always been enviable, but without their collaboration this would have been a far less valuable study. We hope that they can accept these volumes as a partial return for their initiation into the times that try project officers' souls.

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I. INTRODUCTION

The Rand change agent report, commissioned by the U.S. Office of Education (USOE), studies four federally sponsored programs that are trying to promote educational change in the public schools by paying for the costs of innovative projects for a trial period. The study aims to help improve the ways that policies are made and carried out by describing how the process of innovation operates for these projects and by trying to discern what factors affect their outcomes.

This may sound simple enough, but it is not. American public education works through a complex system of influences. First, there is the formal system that finances the schools, each part of it with a certain influence: school district staff and school boards propose local contributions, which local voters pass upon; educational interest groups and state education agencies propose state contributions, which state legislatures and governors pass upon; national educational interest groups and federal education agencies propose federal contributions, which Congress and the President must approve. Second, there are formal structures of administration: teachers, principals, district staff, school boards, county and state educational agencies, federal education agencies, each with varying degrees of authority over different elements of the system. Third, there is a complex structure of informal influence and authority: in the community, there are parents, community groups, and community power structures; in the school, there are varying relations among students, teachers, parents, the principal, and district administrators; in the school district, there are relations among schools, central administration, school boards, and the social and political influences of the community. Beyond the school district, there are informal influences at state and national levels—for example, the influence of state and national organizations of teachers and administrators, policies of teacher training institutions, state and national standards for college admission, pressures from textbook publishers. Finally, at all levels, there are constantly shifting pressures about values, leading to consensus and conflict over educational aims and the distribution and focus of educational resources.

Within this complex system, it is no mean task to find out how change processes work for federally funded programs, or to isolate the different factors that affect project outcomes. We regard this series of reports as a first step toward a goal that is remote and difficult to reach, but nonetheless essential as one basis for effective educational reforms.

This volume is a summary of the first year of Rand's work (July 1973 to July 1974). It also presents in Sec. V some preliminary ideas about what the first year's findings may mean for the future of educational reform. The second phase of the work, covering the 1974-75 and 1975-76 school years, will speak to the policy questions in more detail. By then we will have the benefit of more experience in finding out how innovative projects are continued and spread after federal support has ended.

Section II of this volume describes the background of the study and sets forth the study design. Section III discusses the theoretical basis for the approach taken in the Rand study. Section IV reviews the findings of the first year, and Sec. V tells what we think our work may mean for policy. The Appendix gives the contents of the other volumes in this series.

II. BACKGROUND

Before the 1950s, the government of the United States almost never interfered directly in the curriculum of the public schools.¹ In this century, the biggest federal influence was, and still remains, the action of the Supreme Court in *Brown v. Topeka Board of Education* (1954) and later cases, which in effect said that separating students by race in public schools is unconstitutional. These decisions were momentous, but they remained in the federal tradition and were not aimed directly at either the curriculum or the educational priorities of the schools.

But by the late 1950s, the White House and Congress began to enter the arena of public schools on a large scale. The National Defense Education Act of 1958 (NDEA) and the Elementary and Secondary Education Act of 1965 (ESEA), stimulated respectively by Soviet advances in space technology and the civil rights and anti-poverty movements of the 1960s, defined a new federal role in schooling. It was based on large federal support payments programs that were intended to meet the goals of these new laws: subsidizing special new curricula and materials, providing better education for the children of the poor, training young people for careers, encouraging higher education for minority groups and poor people, and encouraging innovation in the public schools, which is the subject of this study. About one-tenth of federal aid to public schools, which now adds up to more than \$3.5 billion a year, is spent to promote innovations. The USOE pays out most of these funds for a number of categorical programs, including those covered in this study.²

- Elementary and Secondary Education Act Title III, Innovative Projects (\$120-\$190 million annually in recent years)
- Elementary and Secondary Education Act Title VII, Bilingual Projects (\$45-\$85 million)
- Vocational Education Act, 1968 Amendments, Part D, Exemplary Programs (\$16 million)
- Right-To-Read (\$12 million)

THE PROGRAMS

The four programs have much in common, even though each has different aims and methods. Each provides funds, intended to be "seed money," to many school districts for support of innovative projects for a few years in each district. Not only are the change agent program methods alike, but so are the underlying assumptions:

- American schools will benefit from new methods, because the schools are not serving everyone's educational needs well enough now.

¹ Except, starting in 1921, to fund vocational education in the schools.

² Other federal programs not included in this study also aim at encouraging educational innovations (e.g., certain programs for handicapped students, experimental schools, educational voucher demonstrations, Follow Through, elements of the Emergency School Assistance Act and of the Head Start legislation).

- These reforms can be brought about by temporary federal support of projects at the *school* level. No major prior changes in district bureaucracy or in the broader social system are necessary in order for projects to be successful.
- The best (or most feasible) way to bring about change in education is by putting money into the public schools, instead of some other way (such as television, subsidizing competing private schools, reducing public support for public schools, or training parents to be educators).
- Changes sought by these programs would not come about fast enough, or perhaps not at all, without federal seed money.

In other words, these programs all take the existing framework of society and schooling as a fact of life; they choose to use school-based projects as the vehicles for broader educational and social change.

Despite the similarities, the four programs are also very different—each focuses on a different aspect of change and uses different management strategies toward its goals.

Title III of ESEA gives three-year grants (sometimes extended to a fourth year to encourage the spread of successful projects) to projects that introduce new methods or spread proven methods to new sites. The grants are awarded to local education agencies (LEAs) through competitions, supervised in each state by the state education agency (SEA). During the period 1971-1975, the federal government reserved 15 percent of Title III funds for competitive awards to be made directly to school districts, which lately are often used for disseminating successful Title III projects to new sites.

Right-To-Read, which aims at the eventual elimination of illiteracy, encourages SEAs and school districts to pay more attention to reading, particularly for poor children. The Right-To-Read demonstration projects, the program component addressed in this study, fund LEAs to use the Right-To-Read planning and management approach to carrying out reforms in reading instruction.

Vocational Education, Part D,³ offers three-year grants for exemplary projects that are intended to increase students' awareness of and readiness for post-school careers. Half the money is spent directly by USOE, usually on one project in each state; the other half goes to the SEAs, which choose other exemplary projects. The aim of the program is to find new ways of bridging the gap between school and earning a living.

Title VII of ESEA (bilingual education) offers five-year grants, administered by USOE, to help educate children from foreign-language backgrounds whose English is weak, or whose cultural values seem to be threatened by the dominant standards of American life. The program has strong political support from people of Spanish-language origin.

These four programs are just a sample of many that have received federal support over the past decade; in addition, most LEAs and SEAs have used their own funds to try out new methods in education. A good deal of time and money has been devoted to evaluating these efforts, to find out what they accomplished and how useful their results might be for other schools and districts. The evaluation research,

³ The Vocational Education Act, 1968 Amendments, Part D, will be referred to hereafter as VEA Part D.

whose claims to validity are plagued by profound weaknesses in measurement methods, points to rather discouraging general findings: (1) some projects have helped improve markedly some students' skills, behavior, or attitudes, but successful projects are hard to export; (2) few if any projects are consistent—even the most successful ones work well only at a particular time or place, or for some students and not for others.

These results have raised serious questions about the effectiveness of new methods, and, in particular, about the usefulness of federal efforts to promote innovation in the schools.

STUDY DESIGN

In light of these findings and of the federal government's own questions about the assumptions underlying change agent programs, USOE asked Rand in June 1973 to study these four programs, focusing on the following questions:

- How should public school innovations and their dissemination be assessed?
- How do school districts choose, carry out, and pass on different kinds of innovations?
- How do local differences, project differences, or differences in federal programs (e.g., differences in target groups, resource use, project strategies, bureaucracy, politics, federal program strategies, or the interaction of all of these factors) affect how projects are chosen and carried out?
- What should the federal government do about educational innovation in a situation where federal authorities have, by law, custom, and political tradition, little direct control over public schools, and are not prepared to spend large sums of money to influence their behavior?

To examine these questions—in other words, to find out more about the process of innovation and about what factors affect the outcomes of innovative projects—we developed a research design for the first year of the study, which included literature review, development of theory, data collection, analysis of data, and preparation of the first-year reports. The tasks, described fully in App. A of Vol. IV, were as follows:

1. An extensive review of the literature on educational innovations, leading to development of a theoretical approach toward the subject, described in Vol. I (*A Model of Educational Change* by Paul Berman and Milbrey Wallin McLaughlin), which serves as part of the basis for the data collection and analysis.
2. A nationwide survey in 18 states of 293 change agent projects, each in its last or next to last year of federal funding. The survey, conducted for Rand by the National Opinion Research Center in December 1973 and January 1974, included personal interviews with some 1735 people at all levels in the school district, from superintendent to classroom teacher. It sought to find out what factors influence the outcomes of change agent projects. The findings of that survey are described and analyzed in Vol. II, *Factors Affecting Change Agent Projects* by Paul Berman and Edward W. Pauly.
3. Field studies conducted in April and May 1973 by Rand staff at 29 projects.

drawn from the survey sample. The staff observed what was going on in the projects and interviewed project staff in order to understand how the change process worked in different places, for different projects, supported by different federal programs. Volume III, *The Process of Change* by Peter W. Greenwood, Dale Mann, and Milbrey Wallin McLaughlin, discusses the results of that work. Four separately bound appendixes to Vol. III present the field study details for the 29 projects (App. A, classroom organization and staff development; App. B, reading; App. C, bilingual education; App. D, career education).

4. Rand staff interviews with federal and SEA officials who work on the four change agent programs. These included telephone interviews with 54 SEA officials in 18 states, visits to 9 SEAs for more detailed personal interviews, and a series of personal interviews with officials at USOE and the Department of Health, Education, and Welfare (DHEW). The appendixes to Vol. III contain brief summaries of this work.
5. Writing a first-year final report in five volumes. Volumes I, II, III, and V (this volume) are described above. Volume IV, *The Findings in Review* by Paul Berman and Milbrey Wallin McLaughlin, draws all this work together; it relates the findings of the survey and field studies to the theory and suggests some conclusions about federal programs and about policies supporting educational change.⁴

The study design for the second phase, summarized in App. A of Vol. IV, will look at what happens to projects in the two largest change agent programs when federal funding stops. The work will again be based on surveys and field studies and will include Title III and Title VII projects that were visited during 1973-74. The second phase of the work will test the first-year findings and will also allow us to test hypotheses that were not explored during the first year.

⁴ The Appendix to this volume gives the tables of contents of Vols. I-IV.

III. THE THEORETICAL MODEL

Before going on to describe the findings of the first-year data analysis and fieldwork, we set forth here the hypotheses about educational change that are the intellectual foundation of our work.¹ In this study we had to develop some theory as part of the study because existing theories of social change did not fit the response of the American educational system to change agent programs. Like the rest of this first-year report, the development and testing of the theoretical model are still far from definitive.

If there is no applicable theory, why should Rand try to develop one as part of its study? Why not simply collect data and analyze the results to see which projects were successful or unsuccessful and which ones were or weren't continued or spread after federal funding stopped? The answer is simple—this is a policy study, and if USOE, SEAs, and LEAs seek innovation, they will look (if possible) for policies that promote their goals. But it is much easier to find such policies if we can provide an orderly and logical description of how change occurs. This description, if validated, can serve as a preliminary theory of change and can thereby offer some guidance to policymakers in making choices that affect the complex structure of American education. This process of developing and testing theory is particularly important when there is no clear connection between policies and results, when goals themselves are unclear, when the means or technologies used to promote change are hard to describe and vary over time and place, and when the policies being studied are often only a small factor in the many forces that affect outcomes. All of these conditions apply to efforts at public school reform, thereby leaving federal policymakers in the difficult position of following policies for change without ever being sure what connection there is between the policies and the goals of policy.

The Rand study began with a review of the literature on educational innovations and on theories of educational change. Most literature on educational effectiveness agrees that few innovative projects, when compared with traditional practices, consistently improve student outcomes. Furthermore, successful projects usually don't transfer well. What worked well at one time and place may not work at all at another time or in a different setting.

But laymen and experts alike disagree about why this is so. Some say that since schools are already doing as much as can be expected, new practices are unlikely to improve outcomes. Others claim that the new ideas that have been tried out so far don't amount to much because there has been too little research and development. A third view is that real changes *are* taking place but are impossible to detect through evaluation, either because customary measures of outcome (such as standardized achievement tests or tests that try to measure changes in children's attitudes toward themselves and others) are deficient or because the government and the public are in too much of a hurry—educational change takes place slowly throughout the system. Finally, some people believe that the educational system itself resists real innovation, adopting many new practices but carrying them out largely as new ways of doing the same thing. These people claim that successful

¹ See Vol. I.

innovation requires more understanding of how school systems behave and also requires changes in school systems that will encourage genuine and lasting innovation.

Faced with these competing explanations, we turned to the existing body of theory for guidance, particularly to theories of planned change in organizations. These theories tend to focus on how a rational research and development process would interact with a clientele of research "customers" leading to efficient development of innovations and their adoption and dissemination throughout the market.² But these theories do not apply well to public education. The educational system is different from the agricultural system or the health care system. There is no marketplace where customers can choose to buy one firm's products or services instead of another's. School districts may adopt innovations for opportunistic reasons (e.g., the desire to obtain federal grants) or from problem-solving motives (the desire to change an existing or anticipated situation). However, once the innovation is adopted, it has to fit into a system where there is nothing in the situation that forces the educational "firm" either to carry out the innovation or else to lose its customers. The public schools are tax-supported and will continue to operate whatever the fate of the innovation. Furthermore, each school and school system is somewhat different from others and there is no clear and invariable technology. A new curriculum is not like a new lathe or a new variety of wheat because the curriculum is adapted by teachers, students, and administrators to fit their needs and perceptions. As a result, educational innovations are carried out, or not carried out, in different ways at different times or places.

Therefore, without playing down the importance of measurement problems or the other explanations for apparent ineffectiveness, we concluded that for a study of educational change it was important to focus on two aspects: (1) developing hypotheses about the innovative process that would cast light on implementation—the way that innovations are carried out in the setting of the schools; (2) developing an approach that would help to describe which factors affect project outcomes.

The first aspect assumes that the innovative process passes through distinct stages and that the institutional setting (the school, the school district, the community) has a profound influence on the fate of innovations. The second aspect assumes that certain identifiable factors may account for a significant amount of the differences in project outcomes.

² See Vol. I.

IV. FINDINGS

We have reviewed the background of this study and the theoretical approach¹ upon which the research is based. This section begins by describing the stages of the change process, identifying the outcomes of interest, and defining the factors that affect those outcomes. It then summarizes the findings of research: how the process of change operated in the projects we observed, and what factors affected project outcomes.

This is an interim report, and we defer a broader discussion of the implications of these findings to the final phase of the study. This summary is intentionally compressed. Readers who seek a more complete explanation of methods, evidence, and findings should turn to Vols. II and III, which describe the research, and to Vol. IV, which offers a synthesis of the findings.

DEFINING THE STAGES OF INNOVATION AND THE FACTORS AFFECTING OUTCOMES

The Stages of Innovation

We found it useful to define innovation as a three-stage process of *initiation*, *implementation*, and *incorporation*.

Initiation is the period when the LEA staff conceives and plans possible innovations, looks for resources, and decides which projects to select for support. The kind of support and commitment that the project receives then casts a long shadow over the implementation process that follows.

Implementation is the stage where the project, as a reality, first confronts another reality—the institutional setting of the school and the district. This stage, where plans must be translated into practice, is decisive. Rarely are projects carried out exactly to the letter of the original design. Instead they must be adapted into the institutional setting, while the people in the schools, and the organizations those people have created, must at the same time adapt to the demands of the project. In other words we hypothesize that innovation in schools is a process of mutual adaptation. If that adaptation does not take place, then the prospects for effective implementation are dim. This hypothesis is consistent with our observations about the absence of market pressures on schools and the ineffectiveness of technologies that attempt to impose themselves automatically on the adopter, and with the abstract character of most projects' goals in combination with uncertain relationships between these goals and the means proposed to reach them. Given this situation, it is very hard to know whether there has been any real innovation. One way to find out is to see whether there has been a change in what goes on in the system. Therefore, we define implementation as the change process that occurs when the project and the system interact. If nothing happens to change the project, then it probably never

¹ See also Vol. I.

really "met" the system. If nothing happens to change the setting, then there probably was no real implementation.

Incorporation, the final stage in innovation, reflects the decisions that are made when the project is no longer an exotic plant, nurtured by special funding, but becomes part of the daily environment of the district. This is an ultimate test of the district's commitment, for now the initial venture becomes a new orthodoxy, one that the district must support with its own funds. In this stage, the district decides whether to support all or part of the innovation and whether that support should be districtwide or confined to the original site or to volunteer sites or have some other selective arrangement. We hypothesize that incorporation is based on a variety of economic, political, and social factors that affect the district, which in the decisionmaking process often dwarf the issue of project success or failure. That is, many successful projects are likely to be discontinued and unsuccessful ones incorporated, for example, because of the presence or absence of effective community or staff lobbying, for financial reasons unrelated to project success, or on other grounds. Furthermore, incorporation may take place at the classroom level without any conscious LEA decision. If teachers find part or all of the innovation to be useful, they can often make it part of the classroom routine without any need for district support, at least at the change agent project site.²

Each of these three stages engages a partially different group of people whose influence on the respective decisions waxes and wanes according to the stage. Thus, for example, the USOE career education staff is very important in the initiation decision for federal VEA Part D grants, but much less important than classroom teachers, principals, or project directors in affecting the process of implementation. However, continuation is largely a decision for the senior administrators of the district, once federal funding stops.

Factors Affecting Outcomes

Understanding the process of change is a hard task, but it is only part of the story. In order to assess innovations, there must be some ways to measure project outcomes and to find out what affects them. For the change agent study, where projects were new and the different programs had very diverse objectives, we could not rely on measures of student outcomes, such as changes in behavior or test scores. There was no practical way to compare, for example, student outcomes in bilingual reading projects with those in remedial mathematics; even within these categories, it was often too early in the life of the project to assess differences in student outcomes; and well-known measurement problems made such an approach even more dubious.

Therefore, we studied three other types of outcomes, using the information gathered from the survey and case studies. These outcomes were measured by five indicators from the survey data (which were also observed in the case studies); their shorthand names are shown in parentheses.

Implementation Outcomes

1. The relative extent to which participants believed that project goals were achieved (perceived success).

² Spreading the innovative methods to new sites in the district may often call for administrators' approval or at least neutrality.

2. The type and extent of change in teacher and administrator behavior as perceived by participants (change in behavior).
3. The extent to which implementation followed project design (fidelity of implementation).

Continuation Outcome

4. The extent of LEA support for the project after federal funding stops, as reported by superintendents (expected continuation).

Dissemination Outcome

5. The extent of project diffusion to other schools or to other districts (dissemination). This indicator was not used in the first year's work, but will be an important outcome for the 1974-75 and 1975-76 research.

The three *implementation outcomes* are designed to measure what school and district staff thought about the project's success. If the staff perceived, for example, that the project brought little change in their own behavior, and if there was little relationship between original project design and what happened in the schools, then we could conclude that there had been little or no *mutual* adaptation—the schools simply conducted business as usual and modified the project accordingly. The *continuation outcome* is supposed to measure how much, if any, of the project's methods seemed important enough to the district to merit long-run local support. The *dissemination outcome* measures the extent of this local support (does the district use its energy and resources to spread project methods to other schools and classrooms in the district?) and also measures how much and under what conditions innovations spread, wholly or partly, from one district to others.

This report deals almost entirely with projects that were still receiving federal funds in 1973-74. Therefore, these volumes focus on implementation outcomes and *expected* continuation. The next phase of the work, to be reported in 1976, will examine what happens *after* federal funding stops, and will therefore be more useful in assessing actual experience with continuation and dissemination.

We believe that three kinds of factors are most likely to affect implementation, continuation, and dissemination:

- *Project characteristics* (amount of funding, educational methods, implementation strategy, scope of change).
- *Federal policies* (programs' aims and management strategies).
- *Institutional setting* (organizational climate and motivation of staff, characteristics of the school and district, and characteristics of the people most closely involved with the project).

RESEARCH FINDINGS

Describing the Process of Innovation

In the three stages of the change process—initiation, implementation, and incorporation—what elements stood out?

In the *initiation* stage, there seemed to be two types of motives at work—opportunism (where the district's quest was primarily for federal funds) and problem-solving (where the district, sensing real needs for change, tried to deal systematically with its own adaptation to present realities and future prospects). Depending on which motive was dominant, the implementation process and therefore project outcomes were profoundly affected. In general, whatever the motive, project treatments or technologies did not follow the "rational" research and development model.³ Instead they tended to rely on local knowledge; projects installed *in toto* from outside the district usually failed to gather LEA staff support. Early staff involvement in project planning and design was usually a component of effective implementation.

Implementation never consisted of merely applying a fixed technology in an unchanging setting. The interaction between project and setting was neither automatic nor certain. Three types of results emerged: *mutual adaptation*, when both the project design and the institutional setting changed; *nonimplementation*, when neither element changed, usually because of LEA indifference or lack of ability; and *cooptation*, where the LEA changed the project, usually emasculating it, to meet its needs, without any corresponding change in the institution.

Projects that showed evidence of mutual adaptation were most likely to be effectively implemented and to persist. Mutual adaptation did not take place in the opportunistic projects we observed. A problem-solving approach did seem to be necessary in order for mutual adaptation to occur, but such projects were sometimes themselves unsuccessful. For example, in one case a project did not do well when district administrators sought to bring about changes in management or staffing patterns that the staff either could not handle or resisted for other reasons. In practice, mutual adaptation was shown by various adjustments in project and setting, such as modifications in project goals or unanticipated changes in staff relationships. Mutual adaptation tended to be more extensive when projects were complex, treatments were relatively hard to prescribe in advance, and projects required substantial changes in staff behavior—for example, in open-classroom projects, where teaching methods, teacher-student relations, and classroom facilities were all changed together. In practice, this meant that mutual adaptation was difficult to achieve because it imposed simultaneous demands for flexibility and change. Therefore, it was often necessary to develop implementation strategies that promoted mutual adaptation.

Incorporation had two aspects. At the classroom level, teachers and principals often said that they would plan to assimilate elements of the change agent project into the regular routine of project classroom or school, whether or not the district authorized any formal continuation of the project. The assimilation of new practices was more likely when the project *replaced* existing practices, when there was an emphasis on training, when teacher training focused on practical classroom issues, and when curriculum materials were developed by the project staff. At the district level, the superintendent might make a conscious decision to continue the project and encourage its incorporation into the practice of some or all schools in the district. If the superintendent thought a project was not too expensive, was central to the district's educational priorities, had the support of the staff, and was reason-

³ See Vol. I and p. 7 of this volume.

ably "successful" (if not now at least in the long run), then the project was likely to be continued by the district.

Federal policies had the greatest effect at the initiation stage, mostly by providing funds and encouragement for LEAs to undertake projects that reflected federal priorities; and to a lesser extent, by basing awards on certain policies and guidelines that affected LEA project design choices (see Vol. IV). Federal policies had little direct effect on implementation. There were indirect effects, because each federal program was associated with different implementation problems, as discussed below. Federal policies also had little direct effect on expected continuation—it was primarily the LEA's decision.⁴ Such decisions naturally depended on how LEA officials saw the project—whether it was (1) "successful," (2) affordable, (3) important to the district's priorities, and (4) politically acceptable. If the answer was yes to most of those points, then it was likely to be continued. In the case of opportunistic projects, some of the answers were usually negative; in the case of problem-solving projects, they were often positive. In other words, the motives that underlay continuation decisions tended to be the same as those that led to initiation decisions.

Findings about Factors Affecting Project "Outcomes"

Our study design hypothesized⁵ that three kinds of factors—federal policies, project characteristics, and the institutional setting—can influence the outcomes of interest (perceived success, perceived change in staff behavior, fidelity of implementation, expected continuation, and dissemination). Each set of factors had different effects on implementation and continuation. The rest of this section discusses our findings about the effects of these factors.

Federal Policies. The federal programs affected implementation indirectly through the effects of guidelines and management strategies. For example, *State Title III* projects were locally chosen, so that there were often problems arising from unclear goals, perhaps because the competitive system of awards tends to encourage overly ambitious or general statements of project goals. *Federal Title III* projects were likely to be larger than *State Title III* projects and more likely to reflect superintendents' priorities. This may have led to "top-down" innovation with attendant difficulties, such as unclear techniques and comparatively little motivation in the schools—teachers had no feeling of "ownership" of the projects, as they often did for those they had proposed themselves. *Title VII* bilingual projects were hard to implement effectively for reasons that probably reflected the novelty of the federal program and its ambitious goals. Projects suffered from inadequate materials, teach-

⁴ Federal program effects on incorporation are difficult to summarize or to generalize from our data. Right-To-Read specified a management approach that could lead to confusion when unexpected problems arose or when teachers could not understand the materials. *State Title III* was more likely to rely on locally developed materials than VEA Part D. *State Title III* projects were selected by a process that allowed the initiation of projects aiming at serious change, often using many of the methods that encouraged incorporation; but the same selection process also allowed the initiation of projects that made no serious attempt at change. In other words, with respect to incorporation, *State Title III* was a high-risk, high-payoff program.

The fragmentary nature of our information about federal program effects on incorporation is unfortunate, because the real test of educational change is whether behavioral change persists at the school and classroom level. Continuation decisions do not guarantee incorporation. Therefore, the next phase of our research will focus on incorporation for *Title III* and *Title VII*.

⁵ See Vol. IV and p. 10 of this volume.

er overload, and unrealistic goals or schedules. *VEA Part D* projects made few demands for real change and were relatively easy to implement, although there was some parental opposition. But our case studies suggest that host districts treated the projects largely as grants-in-aid, and in that situation implementation is unlikely to be difficult simply because little or no change is expected. *Right-To-Read* was plagued by implementation problems arising from teacher unfamiliarity with materials and lack of prior planning. It also faced occasional parent opposition, possibly because parents have a strong interest in reading and may be critical of new approaches.

Federal programs differed little in their effect on project outcomes—fidelity of implementation, perceived success, change in staff behavior, and expected continuation.⁶ There were some significant differences in difficulty of implementation: Title VII was the hardest to implement and *VEA Part D* the easiest, but for political and social reasons, Title VII projects were nevertheless more likely to be continued than *VEA Part D* projects.⁷

State Title III projects as a whole were no more likely to be continued than other kinds of projects, but those that aimed at classroom reorganization and staff development were more likely to be continued, even though they were often the hardest to implement. This may mean that such projects clearly called for behavioral change and were unlikely to be initiated from opportunistic motives.⁸

Despite such findings, differences between change agent programs explained very little of the differences measured in project outcomes. The other sets of factors—institutional setting and project characteristics—accounted for most of the differences in outcomes.

Finally, two broader points about federal policies are in order here.⁹ First, many of the programs were richer in ambition than in resources—the far-reaching aims of *Right-To-Read* or career education could hardly be met by spending a few million dollars a year nationwide. A corollary is that there was probably not much strong political support for any of these programs except Title VII. Congress has voted constant or declining funds for the other three programs, which in an inflationary period is pretty good evidence of political impotence. Federal program officials responsible for the smaller programs (*Right-To-Read* and *VEA Part D*) have tried to turn this adversity into a virtue, pointing out that changes that can be achieved for modest sums are more likely to be continued by the schools and adopted by other schools after federal seed money is cut off. Our data cannot definitively settle this issue.

A second general point relates to management. In the programs it managed directly, the federal government faced more difficult problems in project selection, monitoring, and evaluation than SEAs did for programs they managed directly.

There are thousands of school districts, federal program staffs are small, and therefore the abilities of these staffs to evaluate proposals in light of knowledge about districts, or, once awards are made, to monitor and evaluate project progress are necessarily modest. The difficulties in making good selections are heightened when, as for some *Right-To-Read* projects and first-round *VEA Part D* projects,

⁶ See Vol. IV.

⁷ See Vol. IV and Sec. V of this volume.

⁸ For more details about continuation, see Vol. IV, App. C.

⁹ See the four appendixes to Vol. III and Vol. IV, App. B.

awards are made on the basis of nominations by states or school districts rather than by competitive proposals. The problems of monitoring and evaluating projects once an award is made are also heightened by the very nature of these programs. From a school district's viewpoint, Right-To-Read school demonstration projects and VEA Part D career education projects are one-time grants from small programs. There is no particular reason why a district should heed federal project guidelines or evaluation results for these programs.

Furthermore, the very shortage of federal monitoring staffs tended to play down the importance of federal objectives in school districts' eyes. Also, direct federal management bypassed SEAs, who tended to respond by ignoring the federal projects as possible models for dissemination in favor of their own priorities. The federally managed programs did maintain some ties to SEAs (Title VII by its political appeal and arrangements for SEA review of proposals, Right-To-Read by its SEA program, VEA Part D and the federal portion of Title III by the division of managerial responsibilities), but apparently they did not carry over into SEA endorsement of model projects.

The chief advantage of SEAs in program management stemmed from their geographical and professional "closeness" to LEAs. First, the task was smaller. Even a large state, like New York or California, had a limited number of projects to manage. For state-managed programs, SEA staff found it easier to visit project sites, assist LEAs in project development and work with them in evaluations aimed at improving the project as it went along. Second, despite frequent differences of opinion between SEA and LEA staffs, SEA personnel were more likely to have views that were congruent with those of districts that received grants.

Despite these advantages, our data show that state-managed programs were only slightly more likely to be implemented effectively and continued than federally managed ones.

Therefore, although our findings imply that direct federal management of change agent programs at the school district level was less effective than SEA management, the policy implications are not conclusive. There may on occasion be good reasons for federal agencies to supervise change agent programs directly in their early years. For example, if a new program is likely to encounter strong initial resistance in some states (Title VII and desegregation aid might be cases in point), then the federal government may wish to build direct links to the constituency groups. However, once the constituency is well established, there seems to be a strong case for reassigning managerial responsibility to SEAs, under federal supervision.

Project Characteristics. Project characteristics consisted of four elements: (1) educational methods, (2) funding level, (3) implementation strategy, and (4) scope of proposed change. The survey and case studies showed that differences in educational methods and funding levels (given the fact that funding for these projects was small compared to the total budget of the LEA) had little or no effect on differences in project outcomes. In other words, an open-classroom project was no more or less likely to be effectively implemented than a computer-assisted instruction project, nor an expensive project more or less so than a cheaper one.

The other two project characteristics—scope of proposed change and implementation strategies—did have a marked effect on project outcomes. The major differences in substance and scope of change that affected project outcomes were:

- *Centrality.* The closer the goals of a project were to major educational objectives of the district, the more likely it was to be continued.
- *Nature and amount of teacher change required.* Projects that required substantial change in staff behavior (such as classroom reorganization projects) often put heavy demands on staff in terms of workload and psychological stress. In the short run teachers were therefore likely to perceive these projects as unsuccessful. But, unless the project required such changes in behavior, long-run effectiveness was suspect.
- *Complexity.* (1) If projects tried to cover too many classrooms in a district or tried to span elementary and secondary schools, they were not likely to be effectively implemented or continued; (2) if the new treatments were comprehensive and therefore required broad changes in curriculum or significant teacher adaptation, the case studies suggest that they were more likely to lead to behavioral change than were narrower treatments; (3) if the projects required complex integration of their activities into the school program, then they were harder to implement (for example, a project with heavy emphasis on teacher training was unlikely to be effective unless it also responded to the daily needs of teachers in their classrooms).
- *Consonance.* If the values and goals of the project were too dissimilar from those of the participants, the project was unlikely to be implemented. Effective implementation was normally accompanied by consonance of participants' values with those of the project.

In terms of policy import, a major finding of this study involves the characteristic of innovative projects that we call *implementation strategy*—the decisions made by the local project staff on how to implement their project. We found that the innovative strategies selected to carry out a project vitally affected how the project turned out. For example, we observed mathematics projects based on the same Piagetian ideas and adopted by similar schools in similar districts had different outcomes depending on the projects' respective implementation strategies. The reason why this finding matters for policymakers is that policy instruments may be formulated that could influence the choice of implementation strategies, even though there may be no leverage on other aspects of implementation.

Because a full discussion of various effective and ineffective implementation strategies would be too lengthy for this report, we recommend that the reader consult other volumes in this study.¹⁰ However, one finding that merits attention here involves implementation strategies that promote mutual adaptation and, we believe, lead to effective implementation. The following strategies operating together promoted mutual adaptation:

- Adaptive planning.
- Staff training keyed to the local setting.
- Local materials development.
- The establishment of a critical mass of project participants.

Innovations using these strategies in concert were likely to result in significant teacher change that appeared to have been incorporated by the participating staff.

¹⁰ See Vol. IV, Sec. IV; Vol. III, Sec. III; and Vol. II, Sec. IV.

The Institutional Setting. The local institutional setting was by far the most important factor in determining project outcomes, according to both the survey data and the case studies. The most important elements were high teacher morale and willingness to do extra work, and the support of principals, as well as of district officials. The reasons seem evident. If teachers see that they are getting support from each other and from administrators, they are being told that they can "afford" to take the project seriously. This also makes mutual adaptation easier because it encourages the kind of changes that allow the institution to adapt to the project. Successful implementation was unlikely where the setting was unreceptive or indifferent (as was frequently the case in high schools, where the professional departmental structure—English, math, social studies, etc.—inhibits broad organizational change). These findings relate to our results about successful implementation strategies. Adaptive planning, staff training keyed to the local setting, and local materials development all helped to secure the support and commitment of school and district staffs.

CONCLUSIONS

1. *Federal program policies* were directly important only at the initiation stage; even at that stage, differences among change agent programs' policies made little difference to project design choices.
2. *Direct federal selection and monitoring* of change agent projects at the school district level were generally somewhat less effective than SEA management.
3. The extent to which the LEA initiation behavior was characterized by *problem-solving motives or opportunistic ones* had pervasive influence on effective implementation and continuation.
4. A receptive local *institutional setting* was necessary, but not sufficient for effective implementation.
5. Two kinds of *project characteristics*—an effective implementation strategy and a scope of change that was as broad as the setting would reasonably allow—were important in promoting mutual adaptation and successful outcomes. Other project characteristics (differences in technology or resources) made little difference to project outcomes, which were primarily shaped by local factors.
6. *Mutual adaptation and successful implementation outcomes* were no guarantee of project continuation after federal funding stops. The decision to continue was affected by project success, but costs and political or bureaucratic acceptability were probably of equal importance.

V. POLICY IMPLICATIONS?

This section, like the corresponding section of Vol. IV, is tentative about the implications of the work for federal policy. Once the second phase of the Rand study is done (in late 1976), we will have more evidence about what happens to projects after outside funding is gone.

Furthermore, it is important to remember that the data and findings of this study are largely based on what happens to projects, and not on the social effects of the programs. Congress and the Executive Branch supported each program for different reasons—for example, general encouragement of innovations in the case of Title III, or establishing a high priority for reading in the case of Right-To-Read. The Rand first-year study focuses on *projects*—on what factors affect their outcomes and on the process of change that occurs, or fails to. This approach can lead to or stem from the belief that a program's effects are largely measurable by the effects of its constituent projects. But there is more to it than that. Title III or Right-To-Read or any other program may have effects that are important no matter what happens to individual projects. For example, the Rand study indicates that among the four programs, bilingual education projects (Title VII) are the hardest to implement and are the least successful in meeting their goals. Nevertheless, as of 1975, Title VII is the only one of the programs that Congress is willing to support with more and more money each year. Title VII *projects* on the average may not be very effective by the standards of efficiency in innovation, but the *program* has been most effective in legitimizing Spanish-speaking people's demands that the schools pay more attention to their children's needs. In a sense, efficiency has nothing to do with it. There might be cheaper and more effective ways to meet the needs at which bilingual programs aim. But, the political test is potency—the ability of the claimants to win large-scale support from Congress, and thereby the political respect, however reluctant, of school districts that formerly could ignore their demands. Forcing the districts to teach in Spanish is a test of that potency, and thereby contributes to the transcending aim—increasing the social self-respect and political power of Mexican-Americans and Puerto Ricans, children and adults alike. It is important, therefore, to remember the limitations of this study as an assessment of federal change agent programs. These larger issues are beyond our scope, and mostly beyond the scope of any scientific research on effectiveness.

This view is consistent with our finding that federal programs' effects on educational innovations are chiefly important for the priorities they establish among categories. For example, existing change agent programs promote LEA activity in reading, bilingualism, or innovative practices. But if change agent programs focused instead on the arts, the three Rs, or gymnastics, then the distribution of change agent funds among districts would presumably change, as would the priorities of many districts.

To the extent that federal policy follows a rational research and development model of educational change, it may to some extent overlook the major findings of the first year's work, which tend to contradict that model. These findings were:

- Project outcomes were primarily determined by the local institutional

setting; in that setting, implementation dominated outcomes, mutual adaptation was the basis of lasting change, and a receptive institutional setting was a necessary condition for mutual adaptation.

- Technology was not self-winding; once instituted, it could not be automatically implemented according to preset plans.
- Districts had different capacities to innovate and to deal with different stages of the innovative process.
- Federal change agent policies had little effect on project outcomes.

If these findings are correct, then they imply that USOE might well seek to explore changes in federal policies toward LEA innovation. Such explorations might include: (1) funding projects according to successive stages of development in the organizational setting; (2) formulating program guidelines to promote mutual adaptation; (3) using federal incentives to stimulate institutional capacity for problem-solving. Volume IV discusses how such initiatives might be explored, pointing out the difficulties and uncertainties involved in following these lines, at least on the basis of what we know now. For example, if the circumstances influencing the decision to initiate a project turn out to affect decisions about continuation, what are the implications for federal policies? Or, considering how strongly the institutional setting affects the district's capacity to change, how can federal policies be made flexible enough to take account of real differences among districts?

Finally, the reader should be warned that there are implicit assumptions that underlie the request for this study and therefore shape the direction of the research—that educational reforms are desirable, and that a more effective change process is called for. There is also an assumption in these tentative policy implications that many people may question: namely, that federal policies should “bring districts along” so that they can innovate more effectively. Behind this assumption rests a tradition which implies that federal aid should be used to accomplish efficiently the aims of national policy. But this conflicts with another tradition—one that rejects conscious federal direction of American public schools and finds positive virtue in policies that are “ineffective” in imposing federal goals on local schools. Our findings about the importance of centrality and consonance¹ attest to the strength of this tradition—federal agencies propose, LEAs dispose. If our recommendations should lead to federal policies that successfully promote systematic changes in LEA attitudes and capacities for innovation, the results may not satisfy educators, parents, students, and the community at large. These observations are not a subject of this research, but they are part of the context for considering any policy recommendations that may flow from this study.

¹ Vol. IV and p. 15 of this volume.

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