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ABSTRACT

This paper presents the technology of the dissemination of an innovation into a school system, its strategies and implementation. The specific requisite strategies are detailed: a) the establishment of criteria to ensure commitment and understanding of instructional systems; b) the development of training programs for school district central office personnel, administrators, and teachers for change capability and roles specific to innovation; c) the establishment of demonstration centers with national representation; and d) the development of a data network and feedback system to permit monitoring the progress of schools. Conclusions are discussed in relation to implementation at the state, school district, and school building level. (BRB)

STRATEGIES FOR THE IMPLEMENTATION OF INNOVATIONS - INDIVIDUALIZED LEARNING PROGRAMS

by

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Introduction

Dissemination of an innovation is in itself a science. As much systematic effort is required in installing a product in a school as the product required in its initial development. Here we are addressing ourselves to the technology of dissemination, its strategies, and the specific means to implement them. RBS' strategy is based on a developmental hypothesis resulting from experiences with school districts and includes the historical background of working with schools since 1966. Today, RBS' instructional systems in several curricula are in use in 400 schools. The experience that the staff has acquired in the process of training teachers and principals, monitoring the degree to which implementation has been successful, and correcting discrepancies between plans and achievements has been useful in determining strategies and designing products.

Research for Better Schools is committed to conducting research about change that leads to strengthening the capability of school districts and State Departments of Education to select, install and maintain improved educational practice.

Our strategy is based on the belief that there are certain kinds of generic processes that are distinctly different from processes related to specific innovations. These generic processes must be facilitated in educational agencies to achieve a better balance between traditional decision-making and the requirements for decisions in the adoption of valid innovations. A basic assumption is that significant educational improvement will result from improving the competencies of school district personnel in planning change programs and from capitalizing on the leadership qualities of school district personnel in conducting such programs.

RBS is examining those decision-making processes in both school districts and State Education Departments. This is being done through a major instrumentality - a Network of School Districts and State Education Departments that are currently involved in improving their respective capabilities to change. These change agencies serve as the mechanism which RBS intends to use to increase the knowledge about school district decision-making processes and the correlative role of State Departments of Education in those processes. Central to this activity is the examination and specification of supportive services to the Network of School Districts in the form of personnel training, program monitoring and evaluation.

Strategies for Implementation

Research for Better Schools has been concentrating on the development of a change capability which can initiate and sustain educational improvements from the district level to the building level. To accomplish the dissemination-installation of innovations and simultaneously develop a change capability, specific strategies have been utilized. These are:

1. establishment of criteria to insure commitment and understanding about RBS R&D products as instructional systems,

2. development of training programs for school district central office personnel, administrators and teachers for both the change capability and roles specific to the innovation,

3. establishment of demonstration centers with national representation,

4. development of a data network and feedback system that permits the monitoring of schools in terms of the progress that students are making, assessing the degree of implementation of IPI and collecting research data on strategies, procedures and roles, and

5. inclusion of state education agencies and the central office administrators in the development of a capability for introducing and maintaining the innovation.

1. Establishment of Criteria to Insure Commitment and Understanding

Specific criteria have been established to help achieve understanding on the part of the schools, school districts, and State Departments of Education. Our experiences with the dissemination of IPI have shown that adequate descriptions of the instructional, organizational and role components are necessary to insure replication, the development of training materials, and the development of criteria to help achieve understanding. Beginning in 1968, RBS established criteria for those schools wishing to adopt IPI. These criteria included:

- Administrative Commitment - A self-study on the part of local administration to gain first-hand knowledge about the essential elements of IPI and understanding of the financial implications of each of these elements is the first step in meeting this criterion.

- Teacher Commitment - The teachers of any given school have the same right as the administration in investigating a new instructional system. Therefore, it is required that the faculty, or at least faculty representatives, have an opportunity to visit our demonstrations schools and talk to other teachers. Teachers then can honestly be involved in the basic decision as to whether their school will or will not become an IPI school.

- Administrative and Teacher Retraining - Teachers and administrators must be aware of the new roles that this system demands. Furthermore, retraining is needed. The understanding of the training program must include the kind of training that is involved, the time needed, etc.

- Participation in Research - Both the teachers and the administration should know quite clearly the kinds of research questions that are being asked, the kinds of data that will be collected, the need for attitude surveys of both teachers and students, etc.

- Uniqueness of the Situation - Consideration of the history of any given school in terms of its own readiness activities for individualization is reviewed.

Once a school district has been accepted, it is expected to be able to:

- Prepare an initial plan for change which reflects: the pupil needs that justify the adoption of proposed curriculum products; a multi-year implementation schedule enumerating which products and school buildings are to be involved in each year; a discussion of the kind of pupil outcomes staff expect to attain; and a careful consideration of resource requirements for a multi-year period and suggested availability of these resources.

- Assess its training needs through the use of RBS' pre-assessment instruments.

- Design and schedule an administrator and teacher training program based on pre-assessment information and the role requirements of the curriculum products to be adopted.

- Prepare and implement an evaluation plan based on the kind of pupil outcomes staff expect to attain.

- Conduct the training program.

- Implement the curriculum products in school buildings.

- Monitor building and classroom operations to gain information that permits the staff in the building to achieve a classroom implementation model that is consistent with the kind of pupil outcomes the district seeks to attain.

- Summarize the evaluation results in terms of the kind of pupil outcomes the district sought to attain.

- Update the multi-year plan with a revised set of recommendations.

2. Development of Training Programs for School District Central Office Personnel, Administrators and Teachers

Training school district personnel to adopt and institutionalize innovations requires systematic strategies and products. These strategies lie outside the typical publisher consultants, teacher guides and university settings. As an integral part of the dissemination strategy, the training (or more accurately retraining) needs are of three basic levels: school district central office personnel, school administrators, and teachers.

For school district central office personnel, the need is for retraining in project management including the basic knowledge and skills essential for planning, supervising and managing educational projects in a local school district. In preparing for the adoption of an innovation, the school district must first be able to develop a plan for change. This plan should reflect the pupil needs that justify the adoption of proposed curriculum products, a multi-year implementation schedule enumerating which products and school buildings are to be involved in each year, a discussion of the kind of pupil outcomes the staff expect to attain, and a careful consideration of resource requirements for a multi-year period. Secondly, the school district personnel need to assess their training needs for the innovation and include the needs for the central office personnel, school administrators, and teachers. Based on this assessment of training needs, a program must be designed and scheduled for the curriculum products to be adopted.

In addition, it is expected that the school district will prepare and implement an evaluation plan based on the kind of pupil outcomes the staff expect to attain, conduct the training program, and implement the curriculum products in the school building. Once the innovation has been implemented, the building and classroom operations must be monitored to gain information that permits the staff in the building to achieve a classroom implementation model that is consistent with the kind of pupil outcomes the district seeks to attain.

Tied to each of these competencies are management training products. For example, for the development of a plan for change, a module designed to aid administrators is the "School District Planning Guide for Change." This package is designed to guide school district

personnel in the development of a tentative plan representing district commitment to change using RBS instructional products.

The importance of retraining school administrators was one of the first and most important things that RBS has learned from its experiences in disseminating IPI. The school principal needs the competencies that are required to plan, manage, and implement curriculum products at the building level. More specifically, the areas of concern include organization aspects required by the innovation including: (1) the need for flexible scheduling of building activities and personnel, (2) the assessment of alternative staffing patterns to provide children with both professional and non-professional services, (3) communication skills in learning to work with the staff, (4) the tools to retrain the teachers, and, most important, (5) how to be the instructional leader in the school.

To accomplish these objectives, a structured Administrative Training Program (ATP) has been developed for IPI which ensures consistency of the program models at all training sites. After successful completion of the ATP, each trainee can:

1. select the appropriate procedure for a student at any point in the diagnosis and prescription cycle,

2. identify patterns of errors and incidental errors,

3. prescribe instructional activities for a student relating to the difficulties diagnosed,

4. identify elements of the instructional activities and management system of an IPI class,

5. generate a plan for teacher training,

6. identify elements of administrator's role responsibilities,

7. initiate plans for planning sessions,

8. initiate plans for a monitoring system,

9. generate aide training plans,

10. generate a schedule for IPI classes and aide time, and

11. generate plans for shelving, storing and ongoing inventory of IPI materials.

For teachers, the training program was constructed upon the model of IPI and includes behavioral objectives, pre- and posttests of objectives, self-instructional materials and equipment, and recommended learning settings. The three volumes for IPI Mathematics, for example, include the following:

- An introduction to the theoretical basis of IPI including a filmstrip, taped discussion, and exercises.

- Diagnosing Student Achievement including the types and use of the instruments. The materials include three individual case studies on cassette tapes.

- Instructional Management encompassing classroom management, daily planning, and planning checklist. Although this volume is completed during initial training, it serves as a continuous training tool.

3. <u>Establishment of Demonstration Centers with Nationwide Representation</u>

For any innovation to have real impact, broad-scale implementation in a variety of student populations is a necessity.

Research for Better Schools, in conjunction with local school districts and State Education Departments, has established a nationwide Network of School Districts in order to demonstrate to the educational community that individualization is a viable and practical strategy for teaching youngsters to be independent and self-directed learners. The assumption behind the establishment of the Network is that demonstration is an effective way to diffuse new educational programs to the greatest number of schools - and students - in the shortest amount of time.

Thus far, 80 elementary schools in 38 states have joined the Network, and many State Education Departments have indicated significant interest in the project. The goal is to build a network of 100 school districts, at least two in each of the 50 states. Although RBS cannot financially support the Network schools, the laboratory is helping schools locate possible sources of funding so that they can participate in this effort to bring individualized learning into the classroom.

In addition to serving as demonstration sites for curriculum innovation and organization, Network schools also serve as training centers for teachers and administrators interested in bringing individualized learning programs to their school districts. Training materials and procedures have been devised by RBS and are available to Network schools. Also, a staff of developmental specialists regularly visit the schools and assist school staff in identifying and solving problems relative to the implementation of individualized programs.

For acceptance into the Network, the criteria to determine a school district's admission include:

1. Agreement to serve as a demonstration site for local and regional educators.

2. Agreement to participate in evaluation activities.

3. At least one school in the district is in the implementation stage with two RBS curriculum products.

4. Either local or state level funding exists.

5. School staff (administrative and instructional) agreement and community support has been attained by the school district.

6. Agreement has been reached to permit joint working relationship between school district personnel and RBS field staff.

7. Student population represents special ethnic, racial, or socioeconomic considerations.

8. District is in an urban setting with special educational needs.

9. Relationships exist between local, regional or state educational agency or institution.

4. Data Network and Feedback System

When RBS products enter the field test stage in the Network schools, they are evaluated with regard to adaptability, feasibility, effectiveness in achieving objectives, and cost efficiency. This feedback, which is continuous in nature, provides data on the effectiveness of product utilization, curriculum implementation, and school management problems. This assists in the redesign and revision of products and procedures.

Since the change in one element will affect all other elements, planning for a new program must consider all other aspects. By introducing one innovation at a time, the introduction and implementation is

facilitated. Among the elements which must be considered are cost factors, time and management.

A second major area of feedback from dissemination schools is the area of quality control. The importance of maintaining the integrity of the innovation and the adoption model, should not be underestimated. If millions of dollars are spent in developing a product, responsibility for quality control should be undertaken.

In the past, many well publicized educational innovations, after attracting widespread interest, failed when implemented outside their initial setting. A major cause of this poor record of implementation has been an absence of detailed systematic specification for the control of the operation, coupled with a realistic method for monitoring and changing the implementation once it was operational in a given locale. For the IPI Program, the goals and elements are set forth in the training materials, and the task remains one of appraising and, if necessary, improving the degree to which they have been incorporated.

Two specific assessment instruments have been developed that help provide feedback on the degree of implementation that each instructional system has achieved.

The Consultant Diagnostic Instrument (CDI) which is the checklist for the consultant's use in periodic observations and reports on Network schools was designed to provide basic descriptive data concerning the degree of implementation for any particular subject to allow for evaluation comparisons across schools and to provide an index of

degree of implementation for each school. Areas of concern in the CDI are prescription writing, supplementary instructional techniques, classroom management, and goals for students. As an instrument, the CDI consists of a list of items for each of these four categories. The RBS consultant visiting a school observes these behaviors and, based on his knowledge of limits of acceptable performance, responds either positively or negatively to each item. For example, either a situation or a process is or is not adequate.

The second instrument developed for use by the local school principal is "Self Improvement Guidelines for New Schools." SIGNS has been designed to provide beginning schools with a means for the assessment of the degree to which recommended processes and practices are used in an individual school. The checklist and form provided enable the administrator to make interpretable observations on the following topics: scheduling, space, school profiles, placement testing, prescriptions, classroom management, and pupil behavior.

If the ultimate goal of product development is commercialization, then this aim must be incorporated into the dissemination strategy. As a specific element, the Network provides a natural facility for commercial products in terms of observation and training.

5. Inclusion of State Education Agencies and the Central Office Administrators

Schools do not select and implement innovations in isolation. They require the support of the local school district and State Education Agencies. Therefore, RBS' strategy includes the establishment of a Network of School Districts involving state and local governments.

With the involvement of State Departments of Education comes the legal authority to implement change and the necessary perspective in judging the needs of local schools and their potential for innovations.

The state agencies are interested in the statewide dissemination of new ideas and programs for schools. Developments such as the 1967 Amendments to ESEA, which strengthened the state role in promoting innovation, and the President's revenue-sharing plan are evidence of increasing need for greater state involvement in educational change. Structurally, no agency is in a better position to work for innovation than the State Education Agency. This agency has power which it must use prudently and with due recognizance of the American tradition of local autonomy in educational affairs. But the fact remains that local school districts derive their legal authority from the states. Through state minimum foundation programs, local districts are largely financed. Through certification and accreditation programs, the states have a significant voice in the conduct of training of teachers and school administrators at all levels. In addition, the great inflow of federal money since ESEA has increased the influence of the State Education Agency.

By building partner relationships with State Education Agencies, the experience of the laboratory with development and diffusion, coupled with the broad perspective of the State Departments of Education's experience in working with total state systems, increases the potential for dissemination.

Conclusions

A variety of complex needs and pressures, all of which interact in diverse ways in different settings, restrict the capabilities of school districts to stay current with their needs for change. While a great deal is presently known about change, not enough is now known about the ways in which new R&D curriculum products can be put into practice.

RBS seeks to integrate its knowledge and experience in a conceptual framework which can guide and direct a systematic study of how R&D curriculum products can be put into practice. This study ranges from State Department of Education relationships with school districts and the R&D agency to the within district strategies and methods that allow R&D curriculum products to be put into practice. Moreover, competencies needed to effect these strategies and methods are being studied at the State, school district and R&D agency level.

Many research questions remain unanswered concerning dissemination. From RBS' point of view, questions related to State Departments of Education, central office personnel in school districts and school level personnel include:

State Level

1. What alternative models of linkages among State Department of Education, school district, and R&D agency are workable? For each model, which R&D dissemination-diffusion functional roles are performed by the respective agencies? How?

2. What competencies, both new and existing, are identified by State Department of Education staff as needed for R&D dissemination-diffusion functions at the state level?

School District Level

1. What alternative models of school district R&D product utilization are workable?

2. What competencies, both new and existing, are identified by school district staff as needed for R&D implementation at the district level? What training materials have demonstrated usefulness in assisting school district personnel to acquire these needed competencies? What other kinds of training programs are needed?

School Building Level

1. What alternative models of school level R&D product utilization are workable?

2. What competencies, both new and existing, are identified by school level staff as needed for R&D implementation at the building level? What training materials have demonstrated usefulness in assisting building level personnel to acquire these needed competencies? What other kinds of training programs are needed?

General

1. What factors inhibit and facilitate incorporating R&D products into practice at the state level? At the school district level? At the school level?

2. What are the relative advantages and disadvantages of involving a commercial agency to incorporate its products into practice at each of the various stages of the R&D cycle?

3. What alternative strategies can an R&D agency employ to incorporate products into practice?