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ABSTRACT

Educational development is a systematic process of creating new alternatives that contribute to the improvement of educational practice. Sources of educational development may be the school itself, colleges and universities, or the instructional materials industry. There are two types of educational development: product development and change support. In product development improvement in educational practice stems from the creation of tools, things or devices, which when used as directed, are known to yield desirable and specified outcomes. The change support approach emphasizes direct intervention, seeking to improve the behavior of those who are engaged in the practice of education. Most educational development is a mixture of these two approaches. The strategy chosen to implement the educational improvement depends upon the relative degree of emphasis on these two approaches. (JY)

EDUCATIONAL DEVELOPMENT

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I *Introduction*

Educational development is seldom considered except as a part of educational research and development. Research-and-development (or R&D) in education seems to have become fused as if it were a unitary process. This paper focuses upon educational development in order to make explicit characteristics that clearly differentiate it from research, since although development frequently builds upon research, its purposes and its methods are different. This difference must be clearly recognized if educational development is to achieve its necessary place among the major functions that are required to be performed to provide quality education.

Educational development is a systematic process of creating new alternatives that contribute to the improvement of educational practice. Richard Schutz has commented on the difference between research and development. He writes, "Research and theory go together like development and improvement. The distinction is primarily in terms of the outcomes generated. Research produces refined knowledge; development produces usable products."[1] The outcomes of educational research activity in this new form seldom can be used to improve education directly. Research outcomes are usually expressed in the form or new knowledge

1. Schutz, Richard E., "Experimentation Relating to Formative Evaluation," Theoretical Paper No. 15, a joint publication with the Southwest Regional Educational Laboratory and the Wisconsin Research and Development Center for Cognitive Learning. November, 1968.

and, therefore, requires various transformation, adaptations or mixing with other knowledge before utilization can occur. This requirement defines the basic activities involved in educational development.

Educational development needs to be distinguished from several other activities all of which can contribute to educational improvement. The classroom teacher is the designer and the producer of much of the materials and procedures with which he does his work. The creation of lesson plans, curriculum materials, teaching procedures and tests to measure student progress and the adaptation of these materials to the individual student's needs and/or to the specific classroom situation, traditionally are the responsibilities of the teacher. Thus, much of the educational materials and the procedures that are in current use exist as the result of the efforts of local teachers. It is becoming clear, however, that educational development cannot be accomplished effectively and efficiently through reliance upon such local efforts alone. The resources, both in trained personnel and money available to school districts, cannot provide for the operation of the local schools and also support for the huge effort required to accomplish nationally-needed educational development. Although the quality of educational practice can be improved through the local efforts of dedicated and skillful classroom teachers, such contributions should not be confused with improvements that can be made by adequately funded and properly executed educational development programs that may have national application.

Educational development is not "innovation." Much has been said and written recently exhorting schools to "change," sometimes with the implication that anything new or different is improvement in comparison with older practices. Educational development can provide alternatives to present practices which, in many situations,

opens opportunity for improvements; but to have an alternative is not necessarily a recommendation that it be elected. Educational development makes intelligent changes possible, but does not mandate change in the specific situation.

Development now receives less than adequate attention within organized educational activities. No specific provision has been made for it to occur within present educational institutions. Although parts of the function are performed by organizations that have other primary functions, what has been everybody's business tends to have become no one's responsibility.

We have noted that some part of educational development has been carried out by professional educators within the local school setting. In larger districts some pieces of educational development have occurred within central school offices, either by a "curriculum laboratory" or school "research office." In certain states, county or regional school offices exist within which development occurs, but these units tend to give priority to management and service functions. Development may also occur within state education departments, but again, seldom does it become a major or primary function.

Colleges and universities have made notable contributions to educational development, but for the most part these institutions have emphasized research and the preparation of personnel as their primary responsibilities to professional education. Recently a small number of colleges and universities have become actively involved in educational development programs. The best examples of these programs are those concerned with creating new and better mathematic or science curricula and have been supported largely by federal funds.

The publishing industry performs a development function by producing textbooks and other printed material for educational use. Questions can be raised

concerning what part of the activities of publishers can be called development as distinct from "manufacturing" and "marketing." Frequently, new educational materials that are produced and marketed by publishers originate outside the industry; for example, a qualified professor or experienced teacher may be commissioned to prepare a manuscript. Thus, much of the development work of publishers overlaps or builds upon that done by individuals in schools, colleges and universities. Recently an interest has appeared on the part of industry in educational markets which has extended well beyond published material, and to mechanical and electronical hardware for use in the classroom. This interest introduces a new dimension into education; i.e., educational technology. It is yet to be determined, however, just what impact educational technology will have upon improvement in the practice of education, but the potential of educational uses of television, teaching machines and computers to assist or manage instruction, etc., looms large.

II Types of Educational Development

Educational development has been defined as the "systematic process of creating new alternatives that contribute to the improvement of educational practice." Since such a process can take very different forms, the activities that constitute development can be quite varied. No one process can be identified that provides a "blueprint" for educational development, because at this time too little experience has accumulated to form a substantial base from which to judge or evaluate alternate processes with confidence. Some trends, however, can be seen among the activities of those engaged in educational development that suggest the major emerging variants of the process. The purpose of this section is to suggest a way of characterizing these trends with the view of extending our understanding of them.

Social scientists frequently employ a method of analysis in which "ideal types" are postulated. It is recognized that few, if any examples of an "ideal type" will likely be observed, but the constructs which "types" represent are heuristic in many of the same ways that other scientists' constructs (e.g., electrons) have proven to be. In educational development two such "types" can be described: the product development process, and the change support process.

The product development process seeks to bring about improvement in educational practice by creating tools, things or devices, which when used as directed, are known to yield desirable and specified outcomes. The emphasis is upon creating the material means for improved educational practice. The needs for procedures or directions for use in the application of the new material are met by creating appropriate supporting materials such as manuals of instruction, operator training material, teacher guides, etc. Thus, the outcomes of a product development process can be described as complete "packages of things" that have physical identity.

Educational development that is conducted following the change support process directly addresses improving the behavior of those who are engaged in the practice of education. It emphasizes direct intervention. Material things are regarded as incidental or clearly subordinate to attitudes, skills, motives, or values of educators. The behavior to be improved includes group or organizational interaction of people as well as that of the individual educator. The focus of efforts need not be limited to individual remediation, but may also include rearrangement of relationship among organizations, as these in turn affect the behavior of individuals within them.

Clearly, little educational development is accomplished in strict accord with either of these two ideal processes. Most development is a mixture of the two,

but may, of course, emphasize one or the other. Before considering the factors involved in determining the strategic mixture of these processes, it is necessary to describe each type more fully.

The Product Development Process

A basic assumption of the product development process is that school personnel are sufficiently motivated to seek and utilize better material and procedures. Also, it is assumed that a major detriment to improved educational practice is the unavailability of well-developed educational materials. If and when improved materials are created, they need only to be made available in order that improvements in educational practice occur. This assumption is shared by the old saw - "build a better mousetrap and the world will beat a path to your door." The product development process tends to equate dissemination with the functions of manufacturing and marketing.

Although the pattern of detailed steps within the process of product development varies with the specific characteristics of the product, it has a common form. In general, it begins with establishing specifications, then moves to invention or design, then to some type of preliminary testing, to redesign and then to a further test, until a product is created that meets specifications. Testing a tentative design or model of the product against specifications and recycling of efforts until a product is created that performs in accord with them, is the essence of product development.

To illustrate the product development process concretely, the specific steps currently being employed by the Far West Laboratory for Educational Research and Development in producing minicourses for its Teacher Education program, can be used as one example.

A minicourse is a short (three to five weeks) course for use by teachers to develop specific teaching skills. The method utilizes the "microteaching" technique. The course materials consist of film, videotape, manuals, guide and evaluation instruments, all constituting a complete "package." Once the decision is made regarding what specific area of skills is to be covered by a given course, development work proceeds as indicated by the following outline:[2]

A. Research and Information Collecting

1. Review literature and prepare report

B. Planning

2. State the specific objectives or behavioral changes to be achieved and plan a tentative course sequence

C. Develop Preliminary Form of Product

3. Prepare scripts for the instructional lessons
4. Prepare teacher handbook and evaluation forms for use in the microteach evaluation
5. Prepare instructional tapes; record, edit and dub
6. Prepare model tapes; record, edit and dub

D. Preliminary Field Testing

7. Conduct preliminary field test in 1 to 3 schools, using 4 to 12 teachers
8. Evaluate results of field test

E. Main Product Revision

9. Revise scripts based on preliminary field test results
10. Revise handbook and evaluation forms and print for main field test

2. Basic Program Plans, Far West Laboratory for Educational Research and Development. September, 1968.

11. Revise instructional tapes; record, edit, and dub

12. Revise model tapes; record, edit, and dub

13. Prepare follow-up package to be used by teachers during nine months completion of the course

F. Main Field Testing

14. Conduct field test using a sample of 30-75 teachers

15. Collect pre-course and post-course tapes of the classroom behavior of teachers participating

16. Collect delayed post-course tapes of participating teachers from four to six months after completing the course

17. Evaluate main field test results to determine if the course meets the specific behavioral criteria established for the course

18. Distribute and evaluate follow-up package

G. Operational Product Revision

19. Revise course for operational field test

20. Prepare complete implementation package including all material needed by a school to conduct the course without outside help

H. Operational Field Testing

21. Train operational test coordinators

22. Conduct operational field test

23. Evaluate operational field test results

I. Final Product Revisions

24. Make final revisions in the minicourse prior to mass distribution of the course for operational inservice use in the schools

J. Dissemination and Distribution

25. Disseminate and distribute course for use

K. Report Preparation

26. Prepare and distribute research and development report, giving results of all field testing of the minicourse

L. Implementation

27. Implement course in the schools

Not all of the twelve stages suggested by the outline (A through L) are consistent with a "pure" product development process. Specifically, the three final steps (J, K, and L) go beyond the creation of the product and are perhaps more consistent with a change support process. In a sense then, the strategy of development of a minicourse at the Far West Laboratory for Educational Research and Development is a mixed one, but one with definite emphasis upon product development.

The Change Support Process

A basic assumption of the change support process in development is that educational practice is improved by direct intervention in the behavior of educators. Improvements in educational practice can be brought about expeditiously by improving the skills, attitudes and motives of those who practice (or control) education. Present deficiencies are assumed to be largely the deficiencies of educational personnel, and thus, the focus of effort in educational development needs to be upon remediating these deficiencies.

The process involved in educational development through change support emphasizes flexibility. Since each human situation is different from all others, each must be met differently. No prescription can be written that will be effective in all or even a majority of situations. As a direct consequence, the persons engaged in change support seldom can make explicit in advance just what steps they

will take toward their objectives. In fact, the development of specific objectives and their achievement often are integral activities and thus, cannot be specified in advance. Educational development from this point of view is a continuing process never to be completed since improvement can never be said to reach a point where further improvement is not possible. In this light, objectives can describe only temporary states in a continuously changing set of human relationships. Evaluation as such loses much of its traditional significance and rather becomes "feedback" in a continuing process.

The activities of an educational developer guided by this process are also characterized by flexibility. One role that has been described explicitly is that of change agent. A person in this role attempts to stimulate interest in changing present practice, provides information about what is possible, and encourages those who are attempting to change or make changes in others. In some sense, he functions as a catalyst in a larger process. Another role for the developer using this approach is that of a coordinator. He strives in various ways to bring together persons or agencies where improvements in education might result from increased communication, or where the effectiveness of activities that are being performed relatively independently could be increased if they were done in concert. A coordinator's role may involve him in negotiation and politics (especially professional politics) and require the ability to manage influence and the use of power. Still another role is that of trainer. In this role, the developer acts as a super teacher, but of school personnel, not school students. Here again the details of the role are marked by flexibility. There are a number of techniques that have been identified and developed to the point that they can be described as specific entities. Among these are role-playing, sensitivity training, T-group techniques, psychodrama, etc. Unlike the cases of educational development through product

development, the change support cannot be described by reference to a common pattern of steps within a well-defined process.

To illustrate specifically the change support process in educational development, an example from the work of the Center for Urban Education has been chosen. The objectives of the Center for Urban Education's Decentralization component of its Community Development Program can be inferred from the following excerpt taken from a recent description of expected outcomes.[3]

"As the plans for decentralization become policy, the various groups involved need to prepare for coming changes. The Center's work in this respect will attempt to anticipate the possible results from different types of decentralization proposals. For instance, we will be studying alternatives for community groups to take on the various responsibilities connected with board operation, with school-community communications, and with parent/teacher relationships. The Center's work with union personnel, and teaching and administrative personnel is expected to provide alternatives for dialogues among the groups involved.

"By 1970 we expect to begin to demonstrate viable, relevant conceptual models of community-school relations, particularly between school officers and local parents. We also expect to demonstrate the connections between local control and the furtherence of equality of opportunity, or to warn through policy studies of the dangerous contradictions that may be evolving if local control results in an increased isolation of depressed neighborhoods.

"In short, we expect to demonstrate technically and then in practice how school-community relations can be reconstructed in at least several modest yet

3. Basic Program Plans, Center for Urban Education. September, 1968.

educationally pertinent respects. We expect at the same time to work against any school-community policies that would decrease rather than improve quality."

The approach used in this educational development activity is our primary concern. It is described in the same document as follows:

"Our main concern for this program is to base its work in those settings where positive accomplishments can be designed and demonstrated. The districts within New York City are too fluid on this issue at present to state with certainty the selection of demonstration sites. These may or may not prove to be the demonstration districts in which the Center's extensive curriculum development is currently pursued.

"These settings for our work must be ones where the Center can carry out its activities either with or without cooperation by public agencies, teacher unions or associations, or neighborhood interest groups. Currently, we are exploring in-depth the possibilities of joining in a three-way agreement with the New York Office of the Mayor and the Board of Education to participate in a 1968-69 support project for school officers and parent groups. These proposals will not become feasible until after the newly-constituted Board of Education has shaped its own agenda for the coming year. We plan to vigorously initiate efforts to secure the support of the central Board of Education, unions and community groups for these decentralization services.

"While the above-mentioned problems of setting and collaboration are being worked on, Center staff will be engaged in the aforesaid analysis of the subissues and the selection of feasible and strategic questions. Many advisory relations and consultative ventures will be undertaken and maintained so as to improve our analysis.

"In regard to decentralization, there are four major tactical avenues to be pursued. First, a limited follow-through analysis of the political decision-making around and within this issue. Second, on the basis of previous study of decentralization, the analysis of issues and assumptions will be completed. Third, a series of training, education and developmental services for a wide range of community groups will be built up on the findings of the preceding studies. Fourth, we will coordinate various services from other committees of the Center on community, parents, school personnel and instructional matters that pertain to decentralization.

"The work of the Center relates to similar efforts in other communities. In Philadelphia there is currently a major issue regarding the relationship of the school system to the Mayor's Office. In Chicago, decentralization of administrative units has taken place and in district Number 14, an experimental program is taking place. In Detroit, efforts have been made to decentralize and provide for ethnic presentation in teaching, administrative personnel and curriculum changes in ghetto schools. At the Stanford Center for Research and Development in Teaching, a current project on Teaching the Disadvantaged includes the use of community development techniques in the Community Center Teaching Laboratory. These techniques engage the active participation of parents and community leaders in the teaching process.

"The Center's broad study of the decentralization issue begins with a significant, seminal investigation of educational political decision-making. This will be continued in the future as a decentralization plan is passed through the New York legislature. While a new legitimate decentralization plan will go into effect only after that time, there are many efforts that may be undertaken to prepare relevant groups and institutions for that time.

"At the same time information from sources other than the Center's study will be analyzed. The Center in this manner proposes to explicate the issues of decentralization. The Center will make explicit alternatives or options on each major issue. We will also trace out the logical consequences of each issue. Various kits of this information may be prepared. Technical advice may be sought from such groups as the Commissioner of New York Education and local bar associations on legal matters of the proposed law on decentralization.

"The Center will serve community groups, not just one group nor all groups, but a number of vital interest groups. The groups selected will include the union, other teachers within schools, administrator associations (SCA), ethnic groups, demonstration district boards, advisory boards, members of media staffs, legislators of education, and the United Parents Association as well as other community groups. All will receive Center informational output and be invited to participate in seminars, workshops and conferences.

"We will not only get the right information to influential leaders but also encourage the broad membership of various groups to view organizational considerations and support structures. The program that we envision is not one of mass community education; it does not duplicate other community action efforts; it will be sharply focused in a unique way around educational considerations in which the Center has had or will develop special experience."

This educational development activity places emphasis squarely upon <u>change support</u> process. The developer is clearly in the role of a <u>change agent</u>, <u>coordinator</u>, as well as a <u>trainer</u>. Procedural steps are planned only in general outline since much that is relevant to exactly what is to be done depends upon the

actions and reactions of a host of others. Flexibility will be demanded to meet many unknown contingencies. The specific outcomes of development are not seen to be material products, but changes in the attitudes and relationship among people that will improve education.

III Strategies

It is not possible at this time to prescribe a best strategy for educational development because of our very limited experience with it. Two "ideal" types of development in current use have been described and illustrated, but most of the strategies being employed today appear to be mixed strategies with different emphasis upon one or the other approaches. This situation can be depicted as in Figure 1 below.

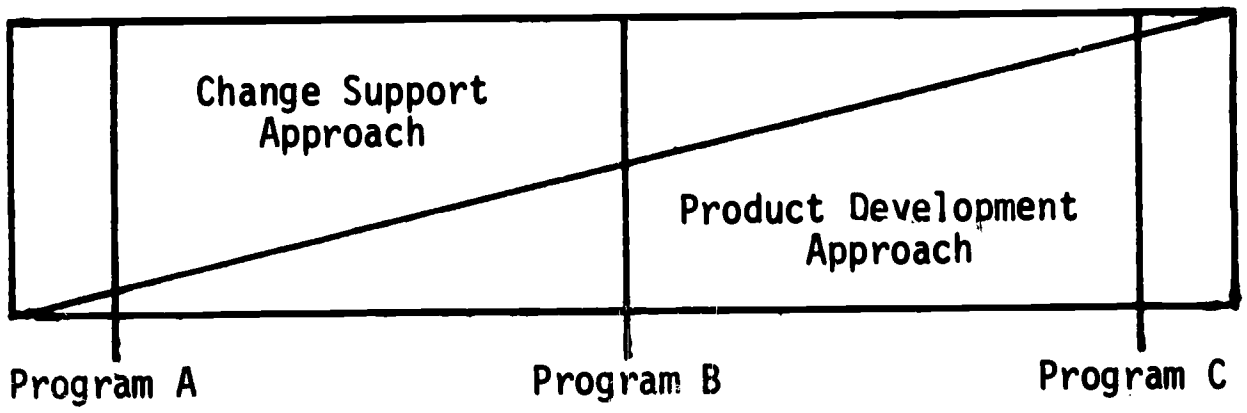

FIGURE 1. EDUCATIONAL DEVELOPMENT STRATEGIES

Program "A" emphasizes <u>change support</u> in its approach to educational improvement. Its "products" may be limited; perhaps consisting only of written reports of progress. Program "C" emphasizes <u>product development</u> in its approach. Concern with support of change may be limited to making arrangements for the potential users to view the products. Program "B" places equal emphasis upon <u>change support</u> and

product development. New educational materials may be created, but the developer also may have some concern with training personnel to use the materials in new ways.

The major question to be addressed in this section is: What factors should be considered in selecting a strategy for development? Only tentative answers can be suggested, but a consideration of the question may itself clarify some of the issues.

It seems likely that the major factor that has influenced the strategy adopted by those now engaged in development work is to be found in the background and experience of the individual developers. Opinions and beliefs about how education can be improved far outweigh solid evidence based on evaluated experience. Much has been written that is relevant to the problem of utilizing the outcomes of educational research, yet little of this writing is based on direct experience within educational settings. Analysis of development experience in business and industry or agriculture have the definite well-recognized limitations that are characteristic of all analogies.

Persons now engaged in directing educational development activities, for the most part, have entered their new work from a wide range of previous professional occupations and have been trained in a variety of academic disciplines. Generally, they have earned graduate degrees in education, psychology, or sociology. Many have backgrounds that include classroom teaching and school administration. Few have had experience in programmatic as contrasted with project research or development. Because of their widely differing backgrounds, it is readily understandable that the differing assumptions of the two processes (change support and product development) might have different appeal to them. The skills to successfully

pursue development work following one or the other approach also will differ with the specific developer for the same reason, and thus, add another factor influencing decisions about strategy.

Perhaps the most important factors that should determine a development strategy are to be found in characteristics of the objectives of the specific program. The relative emphasis that should be placed upon product development or change support should vary from program to program, depending upon what the developer seeks to improve. As a means of exploring this general hypothesis, some of the major programs of the Regional Educational Laboratories have been listed below and arranged in order of their presumed emphasis upon product development or change support:

Programs with heavy emphasis on Product Development

1. Developing a comprehensive individualized primary curriculum which includes components in problem solving, communication skills, vocational education, mathematics and humanities.
2. Developing a comprehensive individualized mathematics program for grades K-12.
3. Developing a comprehensive curriculum to train children in high-order cognitive, affecting and self-actualizing skills.

Programs with somewhat stronger emphasis upon Product Development than upon Change Support

1. Developing instructional sequences for training teachers in basic process capabilities applicable across content areas.
2. Developing a system of individually prescribed instruction for preschool, elementary and secondary students.

3. Developing multi-media individualized instructional and guidance programs for isolated rural schools.
4. Developing a computerized management system as an aid for administrative decision-making.

Programs giving approximately equal emphasis to Product Development and Change Support

1. Developing a language arts program for primary grades, Spanish-American and Indian children.
2. Developing an instructional program to attack language problems associated with Southern dialects.
3. Developing material and strategies to facilitate the adoption of existing process-oriented curriculum materials for elementary grades.
4. Developing alternative educational programs for all children ages 3 to 9.

Programs with somewhat more emphasis upon Change Support than Product Development

1. Developing model strategies for increasing the relevance of formal educational structure to minority community groups.
2. Developing an interpersonal relations program for staffs and students of newly integrated schools.
3. Developing a computer center that serves clusters of educational agencies.

Programs with heavy emphasis upon Change Support

1. Developing models for installation and diffusion of selected educational innovations.
2. Developing institutional research capability in small isolated two- and four-year colleges.

3. Developing mechanism to enable local schools to undertake improved planning and decision-making in adopting innovation.
4. Developing new methods of organization for Northern urban school systems that provide solutions to problems of segregation and community participation.
5. Developing an operational design for a new form of cooperation to provide Appalachia rural school districts with access to quality education.

These very short descriptions of selected development programs do not provide sufficient details to lend much confidence in the manner in which they tentatively have been classified. Study of the more detailed objectives of the programs might result in some reclassification, however; this rough ordering does suggest certain general characteristics of program objectives that may be important in the selection of the emphasis of a strategy. Table 1 is an attempt to make these characteristics explicit.

TABLE 1. CHARACTERISTICS OF DEVELOPMENT OBJECTIVES THAT MAY BE RELATED TO THE DEVELOPMENT STRATEGY TO BE RECOMMENDED

Change Support Process	Product Development Process
1. Complex relationships among groups of people or organizations are involved.	1. Specific behaviors of the individual only are involved.
2. Technological tools cannot be utilized meaningfully.	2. Technological tools can be adapted to support use of the product.
3. The "operator's" input is critical to its effectiveness.	3. Self-sufficient "packages" can be made available.

Change Support Process (cont'd)	Product Development Process (cont'd)
4. Control of the environment within which the change is to take place is minimal.	4. Control of the environment within which the product is to be used is maximal.
5. Deviation from traditional educational practice is large.	5. Deviation from traditional educational practice is small.
6. The total system to which the change must be related contains many human subsystems.	6. The total system to which the product is related has few human subsystems.
7. Attitudes, beliefs, and opinions are germane to the change.	7. Objective facts and figures are germane to content of the product.
8. Outcomes are subject to general long-range evaluation only.	8. Outcomes are subject to evaluation in terms of immediate behavior changes.
9. Power (ability to control) of the developer relative to power of the system is minimal.	9. Power (ability to control) of the developer relative to power of the system is maximal.
10. General objectives develop as the change proceeds.	10. Specific objectives can be stated in detail and in advance.

The general characteristics of the objectives of an educational development program can begin to form a base from which an appropriate strategy logically can be prolongated. A developer might proceed to develop his strategy by analyzing <u>what</u> he wishes to improve in terms of the factors such as those noted above. The "mix" of his approaches, between <u>change support</u> and <u>product development</u> could then be based on his analysis of his problems. Indirectly, since it is not possible to

entertain the idea that an individual developer could free himself entirely from his particular background and experience, we could not expect him to be equally effective in carrying out all varieties of educational development. An organization dedicated to development, such as a Regional Educational Laboratory, might find it desirable to staff its key positions with individuals with considerably different backgrounds and skills to provide sufficient flexibility to carry out its mission. In most cases, this will require a staff compatably oriented and skilled in both product development and change support.

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