This report was prompted by a request from the National Institute of Education (NIE), which in turn stemmed from internal discussion about what to do about the fact that some regions of the country are unserved, or only partially served, by existing educational laboratories. This report was directed to be a description of current laboratories' operations. As a result, it focuses on structural, organizational features on the assumption that lessons could be learned from current organizations that would aid in the planning for new ones. It devotes some space to a discussion of McREL, a new decentralized laboratory. The paper also examines the laboratories' relationships with other organizations. The report concludes that there is a range of research and development functions to be fulfilled: that there currently exist several different kinds of organizations, including regional educational laboratories, whose activities are geared to fulfilling these functions; and that there is no single, best way to think about structuring educational laboratories. (Author/IRT)
REGIONAL EDUCATIONAL LABORATORIES: 1980

A Descriptive Account

Leslie Salmon-Cox

November 1980

The work upon which this document is based was performed pursuant to Contract No. NIE-P-80-0087 of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.
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Introduction

"The enterprise is further along than the understanding of the enterprise." Laboratory Director, 1980

It is hoped that this report will contribute to the understanding of the enterprise. Regional educational laboratories, currently eight in number, are organizations of some maturity. Each has a history of fourteen years. Each has as its primary purpose the improvement of educational practice in the geographical region in which its services are offered.

This report is prompted by a request from the National Institute of Education. That request stems from discussion, internal to the Institute, about what to do about the fact that some regions of the country are unserved or only partially served by existing laboratories. The NIE discussion has been spurred by Congressional inquiry. Once there were twenty regional laboratories. Now there eight and the question is what to do about unserved regions. Both performers and sponsors have learned many things in the past decade which will assist the new planning efforts. This report was directed to be a description of current laboratories' operations, to aid in that planning discussion. It was to focus on structural, organizational features, on the assumption that lessons could be learned from current organizations which would aid in the planning for new ones.

That assumption is probably not a bad one, but it is incomplete. (And, it must be noted, NIE has commissioned papers other than this one, some of which will provide some other contextual information.) For, what is needed is an understanding of the R&D system for education as
a whole—an understanding of what the educational needs are and of how these can be met.

Existing laboratories are both similar to and different from one another. Each has adapted to the environment in which it lives. New labs will need to do so also. While description of current labs may be of some help, a great deal will have to be worked out in situ. However, to the extent that description may be useful, it is hoped that what follows is of the sort required.

It must be stated, at the outset, that from start to finish the author had two and one-half months to conduct this study. More time, to learn more, would have been useful. Further, she is aware of a tone of enthusiasm that pervades the discussion. This should not be mistaken for evaluation. This was not to be an evaluative report, but rather a descriptive one. The enthusiasm emerged not from any kind of assessment of the quality of products of the laboratories (as such assessment was not made), but rather from a sense of them as organizations. They are vibrant, active and house committed, intelligent people. It was difficult not to reflect this sense of enthusiasm, picked up in the field, in this report.
A Methodological Note

The information on which this report is based was collected:

- by reading, plans and proposals of the laboratories, as well as other background material (see bibliography).

- by on-site visits to four laboratories, Appalachia Educational Laboratory in Charleston, West Virginia; Far West Laboratory for Educational Research and Development in San Francisco, California; Research for Better Schools in Philadelphia, Pennsylvania and SWRL Educational Research and Development in Los Alamitos, California, during which visits various members of the laboratory staffs were interviewed (see attached interview schedule).

- by phone interviews with other laboratory staff, where visits were not made, as well as with other knowledgeable people.

The author, solely responsible for the contents of this report, is grateful to those who helped. They are acknowledged at the close of this report.
Some Comments on the Scope and Nature of Educational R&D

There are available several strategies by which school practice can be changed. One of these is effecting change through the application of knowledge derived from disciplined inquiry. It was this approach—improvement through the implementation of research and development—that bolstered the movement to create and sustain R&D centers and regional laboratories.

There is a spectrum of activities to be conducted within the parameters set by the notion of research-and-development. These include:

- research, from basic to applied, laboratory/experimental to field-based/observational, making use of any of a number, or combination of paradigms, generally from the social sciences;
- development, of products, of processes, including instructional materials, school organizational designs, assessment techniques and processes, etc.;
- evaluation, of processes, of products, at any of several levels from the individual learner to state and even national assessment programs;
- dissemination and implementation, of processes, of products, at varying levels.

These terms are familiar ones. There are also currently some newer terms in use when laboratory or center activity is discussed—needs sensing, technical assistance, brokering, synthesizing, etc.—which, in fact, subsume some parts of the various activities listed above. That is, "technical assistance" can include research, development, and/or evaluation as well as other activities. (A current difficulty in the educational R&D literature is the lack of a consensual vocabulary of some precision.)

Each of these activities can be pursued by any of several kinds of organizations. There exist currently both uni- and multipurpose organiza-
tions pursuing educational R&D. What is important is not the design of particular organizations, but rather first, the understanding of the functions to be fulfilled and second, the realization that a division of labor is called for such that all functions are fulfilled. Current organizations, or even sets of them, cannot be viewed in isolation. Rather a picture of the whole is essential. What must be understood is that such a division of labor entails an exchange of resources and a patterned flow of information among organizations and actors within organizations. The complexity of this cannot be underestimated. Ideally, this picture should be housed in Washington, as it is federal funds which have made possible a knowledge production and use system for education, and it is federal funds which shall sustain it over the next several decades.

When the university-based R&D centers were begun in 1964, the expectation was that they would conduct work across the entire spectrum of activity. In 1966, regional educational laboratories were initiated. The creation of these non-university-based organizations in a sense helped to clarify the purposes of the university-based institutes. University centers, given the existence of the new labs, were then expected to concentrate on research and development and to build upon those capabilities which flowed from the availability of personnel shared jointly with academic departments.

However, almost from the start, the definition of the purposes of regional educational laboratories (RELS) was an unclear one. All were non-university based, primarily government funded yet autonomous organizations. Each was to be governed by a Board representative of the region it served, yet each was also to work on problems of national significance.

The program began as a network of 20 institutions blanketing the country (although regional boundaries did not necessarily follow State lines). The program came under attack almost as soon as it was started, projected budget growth
failed to materialize, and within a few years OE support was withdrawn from a number of laboratories; the regional network concept was thus destroyed. . . . With government encouragement, development came to be defined as the central functional emphasis, and in many cases the programs became more national than regional. In 1973 NIE shifted its basis of support from each laboratory's total operations to its constituent programs.4

The lack of a commonly agreed upon definition of "what is a lab," the fluctuations in funding patterns of the federal sponsoring agency, and especially in the past decade, the changes in directives from the federal level (e.g., from the sponsor, from the lab and center review panel, from various site/evaluation teams) regarding program and organization of laboratories have all served to create an environment of uncertainty within which these organizations have attempted to continue functioning.

RELs: Bridges Between Worlds

Before looking more closely at those particular aspects which have influenced RELs, a more general point needs to be made. That point is that regional educational laboratories are "bridging" organizations, bringing together two very different worlds. And, while they perform primarily in one world, they are frequently assessed by the values of another world. It is by now recognized that certain roles people play are those bridging disparate "frames of reference." They are connecting roles, whose function is to be able to translate and bridge not only separate interests but also distinct world view or views of reality. Labor relations negotiators and ombudsmen are examples of such roles. Any large organization contains roles, aspects of which fulfill these functions. When people are acting out this part of a role, it is not uncommon to hear their actions termed "political." This is a tacit recognition that what is happening is the simultaneous apprehension
of two or more sets of interests and an attempt to negotiate an understanding between or among them. While there have long been roles which bridge, whole organizations--complexes of roles--performing connecting functions are less common.

Looking at the sometimes interacting but distinct worlds of research and development on the one hand and educational practice on the other reveals two very different underlying frames of reference. Everyone knows that researchers and school teachers "don't think the same way." Yet, what are the important components of that statement? And what are the implications for organizations whose basic charge is to connect these reference frames?

Four components of the professional reference frames of researchers and school practitioners should illustrate this point with sufficient detail. (See Table 1.) Sketched below are the differences between these two groups along the following dimensions: how work to be accomplished is selected, the "source of the problem"; how such accomplishment will proceed, "methodology"; how it will be determined that accomplishment has occurred, "truth tests" or "definitions of knowledge"; and to whom is the accomplishment told and how, "audiences" and "communication channels."

It is the "problem" of the REL, as an organization, to bring research--knowledge-based information--to bear on practice in order to effect improvement. (Over the past sixteen years a particular role developed quite fully which in itself was a connecting one, that of the curriculum developer. 5 Laboratories, and university centers, for a long time had many curriculum developers as part of their staffs. But in the
### Table 1

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<tr>
<th>Source of the Problem</th>
<th>Methodology</th>
<th>Important Truth Tests; Definition of Knowledge</th>
<th>Primary Audience and Communication Channels</th>
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<tr>
<td><strong>Researchers</strong></td>
<td><strong>School Practitioners</strong></td>
<td><strong>School Practitioners</strong></td>
<td><strong>Researchers</strong></td>
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<tr>
<td>Problem: Create theories, processes and/or products which will improve educational practice</td>
<td>Problem: Produce &quot;educated&quot; individuals</td>
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<tr>
<td>- Developments in base discipline have defined &quot;frontiers&quot; along which to work</td>
<td>- &quot;Ideologically&quot; based and legislatively legitimated social value for compulsory, universal education</td>
<td>- Desire to transmit at optimal level for each individual information and skills which constitute &quot;appropriate&quot; education</td>
<td>- &quot;Statistical validity&quot;</td>
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<tr>
<td>- General societal desire for problem solution</td>
<td>- Curiosity; individual quest for discovery or invention</td>
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<td>- Acceptance by peers on basis of logical validity</td>
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<tr>
<td>- Field testing of products and processes</td>
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<td></td>
<td>- Practical validity, &quot;it works.&quot;</td>
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<td>- Other, similar discipline-based professionals</td>
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<td>- Other professionals through</td>
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<td>- Articles, books, journals</td>
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<td>- Professional presentations</td>
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<td>- Other, similar discipline-based professionals</td>
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<td>- Other similar professionals</td>
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<td>- Educational hierarchy (e.g., district, school board, State DOE)</td>
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<td>- Word-of-mouth</td>
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<td>- Informal communication</td>
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<td>- Public media</td>
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<td>- By reputation</td>
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past several years there has been little curriculum development across the country. University centers, by and large, are research oriented. Laboratories have sought school improvement through means other than or in addition to development work.)

Laboratories face quite conflicting pressures. Their school based audiences, in most pragmatic terms, want deliverables that work. Yet, labs are surrounded by and actually live within another reference group that is academic, research based. They are one-half of a set—in terms of common parlance and budgetary reality—the other half of which are, "centers," research institutes. Their federal sponsoring agency—now NIE, previously Bureau of Research, OE—has an organizational culture which, in part, stresses an academic/research value system. While laboratories must satisfy themselves and their clients according to one set of values, they are frequently specifically judged or generally assessed according to another set.

RELs: Particular Kind(s) of Organizations

As noted above, the environments of laboratories have helped to shape their current designs. Any organization is a function of its environment and of many other factors as well. Significant among these are:

• its leadership;
• its history;
• its personnel capacities;
• its environmental press (i.e., what the organization can do that is needed and viewed as non-duplicative as well as what is demanded of it by those in positions to exert such authority);
• its self-definition, its value structure and philosophy.

These factors, or contributors to organizational structure, are not unrelated: leadership molds and is molded by organizational self-definition; environmental press is interactive with the developing of personnel
capacities; organizational history is interwoven with all other aspects of an organization.

Each current REL is both similar to and different from others in the set of eight. The specifics of the organizations are detailed in the next section. But, in general terms, their similarities are these, each:

- has, as its general definition of its function, the improvement of education;
- relies upon a knowledge base, derived from research and development, to find solutions to educational problems;
- has a staff and management, which, in toto, is eclectic, not simply multidisciplinary but also multiexperimental;
- has won the support of some segment of the audience(s) with which it must interact, as evidenced by continuity of effort and the continuing ability to attract funds.

These statements are at a general level. More specification follows. In the same, general terms, the laboratories are different from one another in that each:

- is in a different region of the country and has adapted to regional needs and opportunities as well as to concerns of national importance;
- has been in existence for more than a dozen years (with one exception detailed below) and has been shaped by the idiosyncrasies of its own history, including management shifts or continuity, personnel profile over time, successes and failures and lessons learned from them.

In this investigation, more differences were anticipated among labs, more similarities were found. On the important point--does the laboratory appear to serve the purpose of effecting educational change through the use of R&D-based knowledge--all labs appeared similar. On matters of detail, some of them even significant such as organizational structure, labs are different. The specifics of similarity and difference are detailed next.
RELs: Specific Information

The sections below are responsive specifically to the questions posed by NIE. These are rather detailed descriptions of the operations of the current eight regional educational laboratories. Inevitably more was learned about the laboratories visited than about those for which only printed material and/or phone conversations were available. And, so, there is a concentration on four in particular. (These were chosen, however, because in part of the differences among them.)

Also, among the current eight there is a strong sense of common purpose. Each and every laboratory is an organization designed to improve educational practice through the production, application, transformation and conveying of knowledge derived from research and development.

Yet, one laboratory--McREL--is different enough from the other seven to warrant some separate discussion. And so, what follows is discussion characterizing seven laboratories. McREL's operations are then characterized to pinpoint where these are distinct and what can be drawn from these distinctions.

In discussion below, unnecessary duplication is avoided. Where information exists elsewhere, that source is cited. For example, a great deal about the governance, management and operating structures of all of the laboratories can be learned from the reports, especially the Interim Report, of the Lab and Center Review Panel. For even greater detail, the 1977 publication "The Regional Laboratory Connection," by Larry McClure is a very rich resource. While the operations of one laboratory are emphasized, details on all current eight labs are also available. The McClure source is cited throughout the
following pages. Discussion then focuses on what was learned from inter-
views and document perusal that seems to be not covered, or inadequately
covered, elsewhere.
Organization, Governance and Management

Governing Boards

All laboratories have governing boards. Members of boards come, generally, from the region served by the lab. In some cases, members are designated by signatory powers or states participating in incorporation and, in most cases, at least some board members represent categories or organized interests in the region. Some boards are totally appointed, others have leeway to, among themselves, appoint "at large" members. Boards range in size from 15 members to 43 members.7

When laboratories were begun and the emphasis was on growth and survival, the active involvement of continuing board members was crucial. Over time, the need for terms of office became clear so that new members with new insights could be introduced. Also the need to be sure that women and minority members were included within boards has only been realized fully within the past decade.

Board responsibilities at each of the labs are similar. Boards are frequently subdivided, especially the larger ones, into various committees and there is, in most cases, an executive committee which meets prior to full board meetings to set agenda and establish positions regarding certain decisions. It is common for boards to set the salary of the laboratory director and to set parameters, but not specifics, for salaries and salary increases for lab employees. Board members may review proposals, general program plans and help to order priorities of laboratories. They serve needs sensing functions, in that they feed into lab plans the needs of their region as they perceive them.
Boards meet quarterly or semi-annually with the top management level of the labs and with various other program directors and staff on rotating bases. Clearly, each board serves shaping functions for each lab and helps to direct internal affairs. Also--though not covertly but less clearly apprehended--each board serves to represent each lab to several publics. As board members are drawn from institutions of higher learning, from state departments of education, from teacher and other professional organizations, they convey images of the laboratory to the domains in which they move. In addition, some board members are in communication with members of Congress, and others at the federal level, and in this way, too, represent the lab with which they are familiar.

Several lab directors expressed a sense of some frustration at their ability to keep their board members involved in programmatic concerns. As board members generally come from areas aligned to but distinct from R&D, they are probably reluctant to direct too closely the specific work of labs. Further, boards of existing labs oversee long-standing organizations whose managements they trust. Nor would highly specific direction be functional; there needs to be in any corporation a distinction between governance and management. Yet, several lab directors specifically mentioned renewed attempts at involving board members in more programmatic detail, since board members are perceived by others as those who should be fully familiar with the activities the lab is engaged in.

Based on my conversations with various lab directors, it seems that new labs should have governing boards whose members have staggered terms of office and whose member-
ship includes women and minorities. A term of eight to nine years appears to be reasonable. There should be attention paid to keeping board members informed about programmatic detail, especially so that in their dealings with others they are fully aware of current lab activity.

**Organization and Staffing**

Organizational structure is a reflection of an organization's philosophy as well as of its purposes or program. Most labs have undergone changes in design in the past several years, as funding patterns and program emphases have changed. In terms of philosophy, however, there has been considerable continuity. That is, some of the labs have long emphasized the autonomy of principal investigators and have had one form or another of project-oriented designs. These structures tend to be fairly "flat" with project leaders reporting directly to the directorate. Other labs have strongly emphasized large programmatic effort and these have program or functional clusters. Those having program clusters are structured around content, e.g., "childhood and parenting," "career decision making," etc. In these cases, total staff within a cluster possess a range of skills. Functional clusters, e.g., "research and evaluation," "technical assistance," etc., include a staff of similarly skilled personnel. In either case, in clustered organizations, mechanisms exist for regrouping personnel to approach new lines of work. The most sophisticated of these mechanisms is one in which a matrix design is employed—the axes being project content by personnel skill—so that for each new piece of work a new group of personnel is assembled. In all of the clustered organizations, hierarchical designs are used and there is an articulated chain of command and decision making.

*It must be remembered that this recommendation, and all those to follow, are the author's, based on her study and do not reflect the opinion of the National Institute of Education.*
The flat organizations offer a higher degree of autonomy for the individual principal investigator than is offered by hierarchically arranged organizations. The latter, however, offer greater protection for the individual worker, as redeployment to new lines of work is an expectation built into the organizational design.

The laboratories possess the capacity for a wide array of activity. This is true, in part, because of their history of shifting emphases, and because of the perpetually unclear definition of the functions of a regional laboratory. The lack of clarity led to multiple definitions and multiple activities. Most laboratories, as many centers, were heavily engaged in curriculum development and/or refinement for their first decade. Yet, from the start, laboratories had also to include among their capacities the ability to work directly, even collaboratively, with school professionals. An interesting trend, one true for both labs and those centers where applicable, is the move away from "laying on" solutions to problems to working collaboratively with school professionals in seeking solutions to their problems. Almost all labs felt also a need both for specific applied research of their own creation and for evaluation units.

And, so, if one considers the range of R&D functions outlined in an earlier section it is clear that university centers "took on" basic research. Probably no lab would claim this expertise. Both labs and centers engaged in development. Labs purveyed research-based solutions to problems to practitioners and engaged in evaluation of products and processes, sometimes, again, using center-, research-produced, frameworks or specifics. In terms of organizational design, this has meant that labs have units--clusters, projects, some organization of personnel capacities--to perform a number of functions.
Additionally, part of the operationalization of the concept "regional" is the recognition that each lab had to define a place for itself in relation to existing structures and needs. While in some areas of the country there is a wealth of resources—colleges and universities, school districts with rich capacities, and/or service centers of one kind or another—other areas are poorer in institutional resources. Part of the definition of activity then, as a lab takes shape, is what can be offered that is not now available. Some types of activity will make more sense than others. Further, regionality can feed rather specifically into content—e.g., the unique needs of the Appalachian region have fed directly into programs of the lab serving that region.

(The question of what "regionality" means has been answered differently across the labs. Each, of course, is place-based and has a governing board, at least in part representative of its region. Each has an area, a group of states, in which it works. Yet, these regions are, and have been, in flux. As some of the initial set of 20 labs disappeared, service regions of some existing labs changed. Some labs appear to overlap—e.g., there are two in California and two others serving Pennsylvania—yet, in fact, no jurisdictional problems were reported. Either labs are working in different parts of the same state or their activities are so different that they are non-interfering.)

Regardless of organizational design, certain characteristics of laboratory staff seem salient, both because these appear to be highly functional for lab operations and because they are unusual. These include:

1. A multifunctional background and capabilities. Lab staff are drawn from a number of disciplinary and experiential backgrounds. They are comfortable acting along a range of applied activities in which the lines
between research, development, assistance, brokering, evaluation and management become very blurry.

2. An ability to conduct work which is eventually "uncredited." It is in the nature of much of the work done by lab staff that there is no "byline." This can be true because large staffs collaboratively develop a product or process; or, because proper, full implementation of a product or process involves a high degree of user involvement, and, in fact, may be enhanced by the user's perception of self-discovery or creation.

Some lab staff produce work which can be reported through usual academic channels--e.g., in journals or books or at professional meetings. Yet, many do not. For them, reward may lie in a sense of satisfaction when work produced meets the pragmatic tests of the practitioner. This cannot be overemphasized, however. It is also the case that some laboratory staff are paid salaries higher than those in academe. And, finally, for some people, lab training has been a stepping stone to other, more lucrative positions.

3. A pronounced ability for risk taking. Among some lab staff, there is even something close to an entrepreneurial feeling. Laboratory staff have nothing akin to "tenure." The past several years, in particular, when labs did not receive institutional funding,
produced a climate of uncertainty, both in flat and hierarchical organizations. While it may be true that business people also lack tenure, in the main business people are judged on individual merit. They do not often face possible unemployment because a program or line of work is terminated, in spite of high personal productivity. This has been the possibility in labs where NIE's program directives have shifted several times in the past few years. In spite of the risk, it is interesting to note the longevity among some labs' staffs.

Regarding staff and staff development, it was uniformly reported that growing-one's-own was the most effective strategy for producing personnel. While this is especially true for women and minorities—and their development has been particularly aided by special NIE funding for this purpose—it is also true for all categories of employees. It remains the case now, as it was in the mid-sixties, that there appear to be no tailor-made training programs within colleges and universities to produce educational R&D personnel.  

All lab directors spoken to reported use of part-time staff and consultants on many projects. There are several reasons for this. The first, obviously, is economic. Some field studies simply require a work force—e.g., for the conduct of interviews—which does not need to be maintained, full time year round. However, another reason for "part-timers" is a more substantive one. That is, school professionals are frequently recruited to become involved in development or other
activities. Such involvement of the practitioner serves both to see that that perspective is fully represented and to heighten practitioner interest in, stake in, not just the particular product but an R&D approach to problem solving.

What the most important personnel characteristics are, as viewed by lab directors, varied by organizational design. Flat organizations require personnel—in principal investigator positions—with sophisticated management skills as a primary prerequisite. This is because the principal investigator in a "flat" organization must handle a much broader scope of administrative responsibility than one in a hierarchy. Hierarchical organizations stress discipline-based training as a first necessity. As one lab director said, "We go for the discipline base and re-tool them for education. . . . We look for proficiency, not credentials." In both kinds of organizations, administrative ability and intellectual competency are salient. In both it is desirable to have the kind of flexibility, of range of skills, mentioned above.

Finally, among the labs, there is a current concern regarding the paucity of middle-level managers. Most have some, of course, but fewer than they would wish. This shortage is attributed to the uncertainties of the past few years, both financial and programmatic stemming from financial.

In fact, not simply at middle management levels, but overall, for most labs, the number of personnel has declined in the past five years. The decline is a result of several factors including inflation, funding limitations, overall funding patterns, and critical reviews which resulted in program terminations. As calculated by one laboratory director, the overall decline is such that in 1980 the work force of labs is 87%
of what it was in 1975. The range of change, however, is large, from a decline to 59% of the work force in one lab to an increase of 117% of personnel in another. Over the five years, five labs witnessed decline, two increased number of staff and for one comparative data are not available.

In regard to both organizational structure and staff numbers and capabilities, decisions made for building a new institution will be contingent on the organization's guiding philosophy and its definition of purpose. Different designs are currently working well in different places. Certain staff capabilities appear to be common across designs. As for defining a "critical mass" of personnel, one laboratory director put it most succinctly:

"There isn't a critical mass by activity, per se. There is, rather the notion of 'significant effort'... probably $750,000 as the lowest unit... $2-1/2 million over three years to get a noticeable effect... 750K is 15 people at 50K on, at least, a set of related projects."

While said differently by others, there was general consensus on this point.

What needs to be reiterated here, most strongly, is that the shape of an organization's structure--existing and future possible--is a function of many inputs. In the special section on McREL, yet another variation of design will be seen. Also, again, laboratories are only part of a larger puzzle. There is much room for variation among individual pieces, provided together they make a whole covering the full spectrum of R&D possibilities.

Any new lab will have to design its structure according to:
- its chosen philosophy of operations;
- its own history and the opportunity structure within its region;
- the functional and content thrusts it chooses to emphasize.
A new laboratory will require staff, some of whose minimal characteristics have been specified above. It will require funding (more on this below) at a level consistent with, at minimum, maintaining staff capabilities to produce a noticeable effect, in any of several various activity areas.
Relationships with Others

Clearly how a lab arranges its relationships with other organizations is at the heart of the matter. Every lab's most basic purpose includes the necessity for interaction, building the connection between knowledge production and knowledge use.

"Interaction with others" is a conceptual category covering: (a) establishing the lab's definition in relation to other organizations in its region; (b) deciding on relevant governance membership; (c) determining which groups, at what times, help to shape the lab's program, both in terms of needs sensing and problem definition, as well as more specific methodological advice; (d) ascertaining which actors, at what levels of the educational system, are the "users" of the knowledge provided; and (e) defining relevant sponsors, critics, assessors and partisan supporters. It is a very wide category.

McClure has covered, in great detail, "relations with others" using the concept "constituency building." His concept covers very much the same range as that specified just above. 10

What will be concentrated on here, then, is the question, "At what level, with which actors, of the educational system's infrastructure do lab staff feel interaction is most critical to effect change?" The answers are several and depend, in part, on the activity being pursued.

That is, for development or pilot testing of products or processes, most often the individual classroom, school or district is the level of interaction. Currently labs doing any work at this level report that school districts self-select and then selection is made from among
volunteers. Interestingly, each person who spoke of this reported that the strategy of his/her lab was to select "the worst possible case," namely sites on which no easy positive results would be predicted, given the student body and past achievement records. Within the "worst possible case" model, having determined a set of such cases, ease of intervention is the next criterion. As one lab director put it, "If they're not interested in the particular project you're offering, don't fight it . . . go for the easiest case under the worst possible conditions." It was reported that this was a distinct change from earlier times when "lighthouse" or model cases were chosen for overall ease.

An example of this is one lab's program to help teachers prepare for newly desegregated schools, in which successful results were obtained in a large urban school district that wanted to be helped. Another lab's program helps teachers, across an entire district, to better match their instruction and their testing program. Developed initially over a long time, in a not particularly troublesome setting, the program was recently disseminated, fairly quickly, to a large urban school district, one normally considered difficult to work with. This experience showed the people at the involved laboratory both that the program worked under far more difficult circumstances, and that, even including the time necessary for essential teacher participation, the lab staff's "understanding of schooling" had improved to that point where they could do in months what had taken years initially to develop.

Several of the laboratories, following the lead of recent NIE suggestions, have begun to concentrate resources at the State department of education level. While development activity seems best suited to
the district level, dissemination activity is more efficiently handled, lab people believe, by working through state agencies. Chief state school officers and their staffs are heavily concentrated upon by several labs, with a top-level lab person designated to interact with a top-level state person to explore what the state wants and needs and what, of that, the lab can best offer.

In states with intermediate units, e.g., Pennsylvania, such units are used also for dissemination purposes. In states with complex state level hierarchies, e.g., California in which there are a state department, state board and state legislature all heavily involved in "running" the educational system, it is frequently more realistic, politically wise and efficient to concentrate on more local levels. (Again, the need to adapt to existing situations is apparent.)

Other relationships mentioned include: one lab's plan to work more closely with institutions of higher education, starting with those represented on its board, in order to better broker services in the area; one lab's plan to experiment in working more closely with professional associations to see if this could be an effective vehicle for conveying ideas; and also, several labs have, and will continue, to work with commercial publishers, potentially the source of largest, quickest impact on American education.

Regarding communication with the public-at-large, several lab directors expressed some frustration. Mass mailings, newsletters, etc., have had questionable pay-off. Small, targeted communications, including sample kits of products available, have been a more fruitful way of developing new relationships. One laboratory has a
"laboratory membership" mechanism, in which organizations in its area may become involved with the laboratory. This lab currently has 807 member institutions.

It was in this context that one lab director discussed his frustration regarding communication, the "frame of reference" problem mentioned earlier. He pointed out that school personnel who had worked with the lab knew its worth because its "products" work and helped them to solve classroom problems. But academe-at-large was as yet unimpressed or unconvinced because there had been a paucity of communication along academic channels.

Finally, all laboratories are part of the new school improvement program established through their joint vehicle, Council for Educational Development and Research. In this way, as in other less formal ways, they also work with one another.

New labs will need to establish relationships with a number of different agencies within their regions. They will do so for several purposes. Where they concentrate resources will depend upon the activity they are engaged in and on the configuration of agencies which surround them. There is no reason to believe that any one agency or level of the educational hierarchy is best for all purposes or that any one can be ignored except at great cost. Choice of level or site will depend not only on activity, but also on organizational development, on degree of maturity to handle varying kinds of problems with sufficient knowledge and self-confidence.
A Note on Centralization/Decentralization

At the present time, only one lab, McREL, has decentralized operations, and these will be discussed below. In the past, several labs had regional offices—one or several people in states served by the lab other than where the main offices were. These regional offices were discontinued around 1973 when institutional support was discontinued and it became impossible to support them. However, lab directors felt then, and now in retrospect, that there were problems inherent in that kind of model. (A model quite different from McREL's, it should be noted.)

In these prior cases, only one or two people were housed in outlying offices. Main operations were centralized. It is reported that it was difficult, if not impossible, to keep these people involved in and up to date with lab activity. One lab director said that they may have served the purpose of reaffirming laboratory presence and interest in the states where they resided, but it was probably not a cost effective mechanism and he would likely not reinstate it today.

Finally, several labs maintain a person in Washington, D. C. to gather information about opportunities and activities at the federal level. This is distinct from the fact that all labs belong to Council for Educational Development and Research which has served to keep labs and centers in communication with one another, to broker joint undertakings, and to represent their interests with sponsoring agencies and the relevant legislative bodies.
Needs Assessment and Response

All laboratories have several mechanisms for ascertaining the educational R&D needs of their regions. The mechanisms are both formal and informal and some have existed since each lab was begun. As recently NIE has mandated new, extensive needs' sensing activity, each lab currently appears to have some new mechanisms in place. It would be unwieldy attempt to summarize these new mechanisms in any detail. Within the next several months, each lab will have developed an assessment of its techniques and will be able to report which appear to be successful. It should be noted that needs' sensing is a two-step process. First the nature of the region's educational needs must be specified and second, the number and variety of existing resources relevant to those needs must be identified.

"Needs' sensing," as a subject, evoked some frustration from lab directors. First, all reported that there have always been more needs to be met than was possible, and so, selection among needs has been the problem, not the identification of needs. Second, some labs' budgets are at a size at which only a small scope of work can be accomplished. For these, awareness and even prioritizing of needs exists and having to spend scarce resources on further needs' sensing is frustrating, at least. Finally, all labs have used their boards, their clients and various review teams, for years, to determine needs. Further specifica- tion, in any detail, appears unwarranted.

"Everyone knows the need--kids need to learn basic skills and be prepared to work. That was the need when we began... we've all made some progress, but that's still the need."

Lab Director, 1980
Laboratories respond to the needs that have been identified, and that it has been decided--internally and with their boards--they have a capability to address, through their R&D activity. All labs engage in:

- Some form of research, frequently research on the knowledge utilization process itself, e.g., how are implementation procedures best structured, or what variables account for successful school practice.
- Some form of "development," both of products and of processes, for use with students, with teachers, with teacher trainer and/or at the state department of education level.
- Some form of service or "technical assistance." This is perhaps the least clear category, as it is one most responsive to needs stated externally. Technical assistance can, in fact, be research or development or some other activity, e.g., running workshops, conducting assessments, etc.

New laboratories will have to identify the needs of their region which they are capable of meeting. They will have available to them multiple models for conducting "needs' sensing." The mix of activities they choose to engage in will be a function of identified needs, of staff capabilities, and of organizational philosophy and self-definition (see above on organization and following on McREL).
There is less to be said about funding than might be imagined. That is, funding patterns, per se, do not seem to be predictive of other organizational factors. While there is a clear distinction in structure between laboratories earlier characterized as "flat" and those characterized as "hierarchical," this, it appears, is a result of organizational philosophy rather than funding patterns.

Looking at three labs--A, B and C--with different structures and at their funding patterns reveals:

<table>
<thead>
<tr>
<th>Source of Funds</th>
<th>Lab A, &quot;flat&quot;</th>
<th>Lab B, &quot;clustered&quot;</th>
<th>Lab C, &quot;complex, hierarchical&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38% NIE</td>
<td>75% NIE</td>
<td>48% NIE</td>
</tr>
<tr>
<td>institutional funding</td>
<td>institutional</td>
<td>institutional</td>
<td>institutional</td>
</tr>
<tr>
<td>52% OE</td>
<td>11% OE</td>
<td>27% OE/NIE non-institutional</td>
<td></td>
</tr>
<tr>
<td>10% other (2-4% foundations)</td>
<td>1% NSF</td>
<td>10% State</td>
<td>12% participating school districts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3% other</td>
<td>8% State</td>
</tr>
</tbody>
</table>

The degree of NIE institutional funds does not appear to be directly correlated with organizational structure.

Lab directors did report concern, over the past decade, regarding the appropriate balance to be struck between NIE/non-NIE funding. NIE funds, currently, are institutional--a welcome relief from the period of program purchase. These, then, provide a degree of organizational stability. They carry with them, however, suggestions from the sponsoring agency, e.g., the necessity for needs' sensing activities which not all labs find appropriate. Non-NIE funds, carefully sought and won, provide a degree of
autonomy and independence. However, they are, usually, shorter in duration and fairly specific in content.

Several lab directors reported that NIE's changes in funding patterns have caused them credibility problems. As they are viewed, first, as NIE creations, fluctuations toward them on the part of the sponsor can be read by others as a lack of confidence.

Some labs receive some funding from participating sites. Others receive almost none. This appears to be more a decision by management on whether or not to vigorously pursue such funds than a measure of how much in-school work is being carried out. Lab A, referred to above, is doing extensive work in a number of districts, but has decided that such work is "service" that the districts generally cannot afford and that seeking funds from them is too cumbersome.

While there does not appear to be a lab director among the set who could not envision how to use more funds, if they were available, in the main amount of funding seems less salient than stability, continuity of funding. There is, certainly, a current feeling among lab directors that the new long-term agreements with NIE provide a sense of stability.

All directors spoken to feel it important to have a diversified funding base. Not all have as diversified a base currently as they would like and they are working now to change that. However, sufficient funding from NIE will always remain essential to maintain a sense of organizational purpose and coherence. The precise amount will vary with the maturity of the institution and with the amount and nature of non-NIE funding.

One lab director suggested that new laboratories be funded totally by NIE for 3 to 5 years, with the expectation that each will cost at least $-1/2 million a year, and can be expected to make some mistakes.
Several lab directors stressed the need for new labs to be nurtured, underwritten for several years and provided with good advice and counsel along with stable funding.

Laboratory organization depends more on philosophy, self-definition, than on funding patterns. New labs will require stable, long-term funding, in large part or all, from the federal sponsor. As these are federal creations, how the sponsor funds them is viewed as a measure of its confidence in them by other organizations in the laboratory's environment. New labs will probably be in a position to seek diversified funding after several years; but, if forced to do so prematurely, this may divert energy from important organization building tasks.

A Note on Internal Assessment

Laboratories differ in how they handle internal quality assessment. Yet, each reports some mechanism for this. At one level, of course, the governing board plays a role in this, reviewing plans and proposals as well as judging reports of completed work.

Within a lab, quality control seems to center most often at the project director, or principal investigator, level. One lab director reports personally reviewing every proposal that is sent out, to make sure that lab standards are being upheld from the moment a new idea leaves its doors. In another lab, personnel expectations are reviewed at one point in the year and then assessment of the degree of accomplishment of the expectations is later reviewed. Not all lab directors read all proposals, but in each case, a management team or directorate group does review both proposals and completed projects.

Finally, laboratories depend upon the reputation they have engendered among those they serve. The rewinning of grants and contracts, the continued access to sites already worked with, the requests for more service, all serve as assessments, quality checks on work completed.
A Note on Closed Laboratories

It was possible to talk with two directors of labs no longer in existence. From these conversations emerged:

- A sense of frustration at a lack of "political savvy."
  A sense that budget-cutting was "in the wind" in Washington in the late 60's and early 70's, and based on political know-how, or lack of it, some laboratories survived and others didn't.
- A sense of frustration about the lack of personnel properly trained to conduct laboratory functions.
- A feeling of pleasure, of "having learned something" from the past lab experience, but also a sense of relief at no longer being involved in such activity.
- Despite organizational demise, little or no bitterness.
McREL: A New Organizational Design

It is important to discuss McREL's operations separately because they encompass a new organizational form, a new conception of the structure of a "regional laboratory." McREL is decentralized, having two main offices, is small in terms of full-time staff, and, compared to other regional laboratories, is less expensive for the federal government to support. This last is true both because of the lab's size and because the lab raises some money for almost all of its projects from those being worked with.

McREL's similarities to other labs include its basic purpose, to improve educational practice in its region, with special attention paid to women, minorities, the handicapped and those attending small, isolated schools. Also, McREL has a governing board much like others, serving the same purpose and having been very active in the past 18 months as the lab has newly taken shape.

Lab staff view themselves as "coordinators," "synthesizers," "initiators," "specialists." The strategy employed for serving the region is the use of "extended staff," "lab associates" who hold other jobs and work, sometimes with lab staff. The region served is geographically quite broad (eight states making up the better part of what is generally known as the "Great Plains" area). While some other institutional resources exist, there are not a great many. There are, therefore, many educational needs with few organizations to meet them. Further, the people of the region were characterized by one lab member as being resistant to outsiders. Because of these characteristics of
the region and of the kind of service the lab has chosen to deliver, de-
centralization and the use of part-time staff appear reasonable choices.

The lab currently supports a small research program which is in-
vestigating variables associated with school achievement. The project
began with a sampling of schools in the region and the collection of ob-servational data which were used to develop state profiles. For example,
in South Dakota 24 schools were studied and, presently, lab staff are
intervening in 12 of these along dimensions they have decided are critical
for school improvement.

The lab, to date, has done no original development work but rather re-
fines, redevelops, recombines programs and problem solutions from a number of
sources. A large part of this process, as apparently all activity of
the lab, is the active involvement of the client-users. Problems are
defined and solutions arrived at by groups comprised of lab staff and
clients. Since the client is also financially supporting the effort,
lab management feel that this approach obviates the need for needs'
sensing. In addition, dissemination is an integral part of all activ-
ity, built in from the start and not a process requiring separate
attention.12

There is clearly much to be lauded in McREL's approach. Lab
management sound enthusiastic about current operations and some staff
at NIE appear to speak of the lab with unusual interest and enthusiasm.

There is one large problem in this thought, one which has nothing
to do with McREL, per se. Rather, the problem is that alluded to earlier
in this discussion: the need for national planning, system-wide, the
need for a guiding concept of the full range of R&D functions and of
the variety of organizational forms to fulfill these.

As the director of McREL is fully aware, the lab depends upon a knowledge production base of others' creation. As he said, the lab appreciates being "backed up with an even heavier knowledge production end. ... I see an increasing need for this." Both from internally, but also especially, from external sources, a lab like McREL needs to have a storehouse of resources to call upon. And, in many cases, these resources come from other labs, and university centers, as well as other knowledge producers. Given the basic research nature of recent center work, the inability of producers beyond labs and centers to generate many large-scale programs, it is the other existing regional laboratories that are frequently producing the kind of pragmatic solutions called for.

New laboratories could learn a great deal from McREL. The management there is eager to share and feels that they have made great strides, especially in the areas of managing a decentralized operation and in involving people external to the lab. Should new labs look more like McREL than the other, larger existing labs, they will have elements of a model to emulate. But, should the notion take hold that all labs look like McREL, then a band of the spectrum of R&D functions will not have organizational performers.
In Conclusion

Specific conclusions pervade the body of this report, which is brief enough so that their repetition seems unwarranted. Regarding the construction of new laboratories, what it is important to emphasize is:

- There is a range of R&D functions to be fulfilled.
- There exist, currently, several different kinds of organizations, including regional educational laboratories, whose activities are geared to fulfilling these functions.
- There is no single, best way to think about structuring laboratories.

What has been learned from this study is something of the variety of organizational forms already existent. Innovation in organization building is not to be shunned, but rather encouraged. As long as the total system requirements are both kept in mind and attended to, organizational variation will keep the field healthy and active.
Acknowledgments

The author is very grateful to the members of the regional educational laboratories who shared with her their sense of excitement about the enterprise. In addition, several other people knowledgeable of the field have been generous with their time and suggestions. To each, listed below in alphabetical order, thank you.

Audrey Champagne
Francis S. Chase
John Connolly
Terry Eidell
Edward Gotts
Kenneth Harms
John Hemphill
Robert Herriott
Burkart Holzner
Everett H. Hopkins
John Hopkins
C. L. Hutchins
Lynn Jenks
Keith Kershner

Donna Lloyd-Kolkin
Louis Maguire
Janet McGrail
Patricia Milazzo
Lochran Nixon
George Rusteika
Ann Sarmento
E. Joseph Schneider
Richard Schutz
Roger Scott
Joanne Stolte
Richard Wallace
Ida Westbrook
David Winefordner
References


Miller, R. I. *Regional educational laboratories.* Phi Delta Kappan, 1966, 48, 144-149.


Paisley, W., Butler-Paisley, M., & Shapiro, K. The status of educational research and development in the United States, 1976 databook. Panel for the Review of Laboratoris, and Center Operations. Research and development centers and regional educational laboratories, strengthening and stabilizing a national resource. (Submitted to the U. S. Congress and the Director of the National Institute of Education, 1979.)


Footnotes


7. For more specifics on board sizes, mode of selection and representation, see McClure, 1977, pp. 91-97.

8. For McClure's discussion of structure, see McClure, 1977, pp. 123-144.


11. See Appalachia Educational Laboratory, February 1980; Olson, 1979; Research for Better Schools, 1980; McGrail and Chow, 1980.

12. For an NIE staff view of regional laboratories' brokering roles, see Mason, 1979.
APPENDIX A: INTERVIEW FORMAT

As you know, NIE has commissioned a group of papers to inform the current discussion regarding how best to provide R&D services to those parts of the country currently unserved or only partially served by Regional Educational Laboratories. The focus of the paper I've been asked to do is descriptive. That is, it is to provide a picture of current PELs, noting differences and similarities among them in terms of their organization. Though the paper will be descriptive, not prescriptive, it, together with the others being written, are to be used to help the Institute think about planning new institutions that prove feasible. I have read the plans and proposals about your institution which NIE has available. Some questions, clearly, can be answered simply by reading. However, in addition and for clarification, there are some questions I'd like to ask you directly. I've grouped them according to categories that seemed sensible to me. But you must tell me if, in fact, they do make sense and what I've left out.

1. Re: definition as an institution.

What do you see as the major functions of a regional laboratory?

How are (name of lab) functions and activities similar to those of other labs? How different?

Given the multiple functions to be fulfilled, in terms of your internal organization, how are resources allocated among these functions? (e.g., how much on research or development or dissemination, etc.).

(got over copy of org. chart) Please discuss with me how you are organized, how staff are grouped (e.g., by skill—i.e., evaluator, disseminator, etc.—or by program area—i.e., bilingual ed., desegregation, etc.).

Do you conduct internal reviews, self-evaluations? If so, how are the results implemented?

Do you have some mechanism for measuring the effects of your work, some sort of outcome measures?

What strategies have you found useful in establishing the utility and the validity of R&D as a route to educational improvement?

How are your service activities organized, centrally or decentrally? What are the advantages/disadvantages?

2. Re: needs sensing. How does (name of lab) get a feel for the needs of its region?

Since no organization can do everything, how are these put into some priority ranking?

Are the needs that are identified by your governing Board consistent with needs identified by some other means? If, when, there are differences, how do you resolve that?

Would you please discuss with me your major programmatic thrusts at this time and how these relate to the needs you've identified.
3. Re: interaction with others

What organizations/actors do you interact with regularly and for what purposes?

In order to bring about change, improvement, what groups/actors have you found it most important to work with? What is the pattern of resource allocation among them (e.g., how much time/money is spent at the individual school level, district level, with state-wide agencies, etc.)?

How do you choose the sites you work in? What is the mix between greatest need and feasibility of accomplishment?

4. Re: internal staff

What kinds of training do you find best suited for the various activities you conduct? (go over, function by function).

Is there a "critical mass" necessary for particular activities?

In what positions, or for what kinds of activities, is longevity of key personnel an issue?

What kinds of role labels do you use? (titles)

What is the mix in your lab between recruiting people already suited for a job vs. on the job training.

5. Re: governing Board

Please discuss with me the functions and activities of your governing Board.

How are Board members appointed?

How are new candidates identified?

If you have, in addition, other advisory groups, how does the Board composition differ from these, if it does?

What is the form of internal, lab staff support for the Board?

What kind of issues do you bring to your Board for them to be part of the thinking from the start?

What are the issues for which you simply need their approval?

Who, within the lab, interacts with Board members? For what purposes?

6. Re: funding

Please discuss with me your various sources of funds.

What do you perceive to be the effect of your funding patterns on your organization, its structure, the content of activities, etc?

What are the implications of your funding patterns for staffing (e.g., use of consultants, etc.).
How much of your funding comes from organizations to which you provide service?

(Get funding info, by term of funding, by source as percentage of total).

What haven't I asked you about what you feel would be crucial to my understanding the nature of your organization?