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ABSTRACT

Several documents concerning regional educational laboratories are reviewed, key propositions are analyzed, and recommendations are proposed. Attention is directed to the way that labs and centers operate with regard to dissemination and school improvement. Overviews are presented of two major reports: "R&D Funding Policies of the National Institute of Education: Review and Recommendations," (Roald Campbell) and "Research and Development Centers and Regional Educational Laboratories: Strengthening and Stabilizing a National Resource" (Panel for the Review of Laboratory and Center Operations). Additional documents that are reviewed include: "Information Dissemination and Exchange for Educational Innovations" (Michael Radnor et al.); "The Research and Development Exchange: In Support of School Improvement" (National Institute of Education Regional Program Unit); "A Description of the Regional Services Program" (Richard A. Lallmang); "The NIE Regional Programs: Evolution of the R&D Exchange and Regional Service Components" (John A. Emrick and Susan M. Peterson); "Organizations that Perform Educational R&D: A First Look at the Universe" (Laurie M. Sharp, Joanne Frankel); and "Performers of Research and Research-Related Activities in the Field of Education" (J. Frankel, L. M. Sharp, and Albert D. Biderman). (SW)

Regional Educational Laboratories and University Centers: Institutional Capabilities for School Improvement

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October, 1981

Overview

This paper is a review and synthesis of several existing documents. It is written to distill the knowledge accumulated in these documents regarding regional educational laboratories (RELs) and university centers and their dissemination and school improvement efforts. The paper is in three sections. The first contains brief, analytical descriptions of the reports reviewed. The second section is a propositional overview of the lessons learned by comparing and contrasting these reports. The third is a brief set of recommendations which grow out of the preceeding two sections.

None of the reports reviewed is directly focussed on the questions to be answered. Hence, this paper relies upon inferential logic and the background knowledge of the author. The major argument which emerges is, in fact, a relatively simple, but compelling one: in the area of school improvement, organized capacity for problem-solving is important; organized capacity does not guarantee, but makes far more likely, that high quality work will be done; high quality educational research and development is needed for school improvement.

What is seen by reviewing these documents is a history of growth and organizational learning. Such growth and learning is characteristic of both the sponsoring agency, the National Institute of Education (NIE) and organizational performers in the field, labs and centers. The two major overviews included in the documents reviewed--the Campbell and "Panel" reports--are separated in time by four years. It is significant to compare not just the content, but also the tone of these two reports. One is a report of "growing pains," the other, an account of a maturing field. In the period between the two, the NIE increasingly took on purposeful shape and direction of

the field. The labs and centers, coming into their second decade of performance, continued to demonstrate the benefits that can accrue from institutional capabilities. Together, NIE and the labs and centers have come to represent an important, organized capability for educational improvement.

Section 1, Review of Selected Reports

R&D Funding Policies of the National Institute of Education: Review and Recommendations

This report, popularly known as the "Campbell Report" (for the Principal Consultant, Roald Campbell), was published in September, 1975 following a period of three months of intensive work by the Consultant group. Their charge was to report to NIE and NCER, "evaluating the impact of (educational R&D funding) policies on the nation's educational R&D system, with special reference to the regional educational laboratories and research and development centers established by the government in the 1960's." (p.i) Data, on which the report was based consisted of:

-a meeting with lab and center representatives and the executive director of CEDaR;

-responses to questionnaires sent to all labs and centers;

-meetings and interviews with NIE staff;

-visits to selected R&D institutions, CEDaR members and others;

-an extensive number of individual contacts with "knowledgeables" in the field;

-review of available literature;

-the collected expertise and intelligence of the consultant group.

Despite the general title the report focuses, with heavy emphasis, on labs and centers. It is apparent that the Consultant group felt compelled to scrutinize this particular set of organizations within the context of, first, dwindling funds for the NIE and second, then, an increasing percentage of NIE funds being allocated to these organ-

izations.

The Consultant group noted the "inflated hopes of the 1960's and the pessimism of the mid-'70's" (p.6) and pointed to pivotal characteristics of inquiry in the fields related to education.

-As in other human service fields, demands for pure service in education always exceed available resources, thus the inevitable need for continuing justification for allocating funds for other purposes, e.g., R&D.

-American public education is not centrally controlled, but is open, vulnerable and complex, and therefore knowledge, which is in its nature tentative, will not be universally applicable and may appear a weak tool among other contenders, when school improvement is the focus.

-Knowledge is not self-executing but requires implementation and the desire on the part of those implementing to achieve the results implied by the knowledge producers.

-Finally, there will be no single "breakthroughs" or sudden panaceas. (p. 6-7)

On these grounds, the group counseled restrained expectations but, indeed, continuation of the effort to improve education through knowledge-based inquiry.

> Against this background it is well to ask whether investments in this difficult field are worth the money. The only possible reply is that we must keep plugging away at the difficult problems of learning and teaching and that doing so by orderly scientific inquiry is almost certainly better than by hunch. (p. 64)

The report details the then current resources for educational R&D (a picture confirmed by the 1975, later 1976, DATABOOK). It has as well a charter on the context for policy-making at NIE and another on current policy directions.

The consultants took a highly critical stance towards NIE, finding the Institute's shifts in policy and direction vis-a-vis

organizations in the field destructive of organizationsal capacity. Also, particular attention was paid to the lack of a reasonable concept, and ensuing activities, of dissemination within the Institute.

> We understand the political pressure for "dissemination" of the results of R&D, but we conclude that NIE has done little to attack the problem as a substantive matter or cluster of issues and competing conceptualizations. We do not think that work in the field can be halted until theory catches up, but we do believe an experimental attitude would be helpful even as action goes forward, and that diverse groups within NIE could be brought together more directly to consider paradigms for change and the various roles of "dissemination" within them. Research on knowledge utilization could be more extensively funded as an essential basis for policy in this area. (p. 68)

Attention was paid also to the need for NIE: to view State and local education agencies as R&D performers, "not mere recipients or beneficiaries of others' work" (p. 12); to significantly fund basic research, not simply "smuggle" it in (p.17); to pay special attention to expanding the training and apprenticeship opportunities for women and minorities (p.75).

In several places it is noted that individual staff members of the Institute are thoughtful, hard-working, innovative in their approach to ideas, and were helpful to the consultant group in compiling its report. However, assessment of NIE as an organization led to serious questions regarding coherence and effectiveness, and in effect, the whole was found to be much less than the sum of its parts.

Perhaps the single most interesting recommendations of the report--certainly the most important at the time--is that regarding the establishment of "national laboratories." The Consultant group viewed the then remaining labs and centers to be a highly mixed group of organizations varying widely in purpose and quality of work. Noting the dimunition in the number of organizations established throughout

the '60's, the report writers concluded that "there may have been more success in eliminating marginal institutions, or at least ending their substantial Federal support, than success in improving the quality of work at those remaining."(p.69) The group noted that directors of labs and centers did not expect "institutional support" unrelated to performance, or the relevance of their work. They concluded that what was necessary was the designation of some of the existing labs and centers (perhaps 6 to 8, perhaps fewer) as "national laboratories", a set of "high quality institutions with which it (NIE) will work very closely to carry out its missions, managing them towards goals the agency and the institutions can comfortably share." (p.69) It was concluded also that no more than 1/3 of NIE's program funds be allocated to these special institutions. And that, overall, expanded funding for educational R&D was essential.

In sum, the Campbell report was largely, albeit constructively, critical of NIE, expressed misgivings about the quality and performance of some of the then current set of labs and centers, and was particularly concerned about the problem of dissemination. The report recommended that NIE establish a few national laboratories and, in addition, work more closely and collaboratively with State and local education agencies. Clearly, the writers of the report felt that labs and centers and the work that they engaged in were important tools in the process of improving schooling. But they also felt that a reorganization of that arsenal was called for.

Research and Development Centers and Regional Educational Laboratories: Strengthening and Stabilizing a National Resource.

Three and one-half years later, in January 1979, there appeared this report, commonly known as "the Panel Report." This was the work of a panel created in August, 1977, members appointed by the Director of NIE,

at the behest of Congress which mandated the review panel as part of the Education Amendments of 1976. The panel's work was conducted between September 1977 and January 1979 when it issued its final report. Some subset of the panel visited each lab and center and the report contains detailed accounts of these site visits. In addition, there are chapters detailing the history of labs and centers and their relations with NIE, the support recommendations for individual organizations, management issues vis-a-vis labs and centers and a separate chapter on dissemination and equity issues.

The panel, apparently to its own surprise:

> found a vigorous set of research and development institutions doing work of quality and significance for American education. We had not anticipated this conclusions; we approached our task with full knowledge of the considerable controversy we had been asked to address. (p.iv)

The panel, echoing the Campbell report, while finding weaknesses in the work of some lab and centers, also found "past federal policies for their support to be particularly accountable." (p.iv) It went on however to commend the NIE for improved practices, especially direction and support of labs and centers. The panel heavily endorsed the concept of institutional support for organizations meriting it, along with the phasing out, asnecessary, of work in areas no longer deserving special priority. (p.vi)

The panel report meticulously detailed the history (which they called a "history of instability and conflict") of NIE funding policies for labs and centers. When these organizations were shifted from USOE to NIE, funding was shifted from an institutional to a project basis, later a "program purchase" policy. This caused severe weakening of organizational capacity and was a tension not resolved until the aftermath of the Campbell report. NCER in 1975 resolved that the NIE Director had the authority

to establish "special institutional relationships." This gave a policy mandate to support labs and centers as institutions, and in the view of the panel, was a step towards proper management of existing institutions. What runs throughout the panel report is the theme that labs and centers are important institutions for effecting school improvement and therefore, their management and nurturance are of great importance.

The panel dealt specifically with the need for labs and centers, saying that the knowledge accumulated in the past two decades reaffirmed the need for centers and "strengthened the rationale" for labs.

> . . . increased understanding of the political dimensions of educational change reinforces the argument for decentralized decisionmaking. These considerations strengthen the rationale for the functions of regional educational laboratories that are governed by and responsive to regional interests in collaboration with the sponsoring Federal agency. (p. 7)

The panel expressed awareness of the increasing diversity of R&D performers compared to that era in which labs and centers were established. It pointed to an, as yet, incomplete study underway of that set (see Sharp and Frankel, below). Yet, the particular functions served by labs and centers--the critical mass and cumulative experience in each--they felt to be unserved by other forms of organization.

In a special chapter of the report, the panel dealt quite specifically with the question of dissemination. Their concern was motivated by "awareness of the need for systematic efforts to ensure that the results of (lab and center) work be utilized." (p.43) They were concerned, as well, that lab and center staff keep themselves apprised of the work of other colleagues, and that they coordinate their dissemination efforts with the many others in existence.

> We see too little attention to forms of dissemination that are firmly linked to the improvement of practice and too little integration among the efforts that exist. (p.43)

The report details the past twenty year intellectual history of the concept of dissemination, pointing to several stages. Early work focussed

on "sowing of seeds" through information dispersal and led, for example, to the ERIC system. Next came two-way exchange notions, leading to "needs sensing" and "feed forward" mechanisms. Then came "State capacity building" efforts. All of this was followed by a recognition that many educators were suffering from "information overload" their problem being to develop selection criteria. The current scene they found to be characterized by an emphasis on human support systems to provide technical assistance and staff development and on "invisible college" building to promote more extensive peer communication. (p.43-45)

The panel saw the developing Research and Development Exchange (RDx) as a potentially strong force for comprehensive dissemination efforts. It also noted that as labs and centers were, each, a unique organization, no simple formula for dissemination activity could be developed. It therefore recommended that as NIE continued to strengthen its State-capacity building activity, it should also encourage and support lab "efforts to assist each State in the region served to establish effective dissemination procedures." (p.46) It recommended also that

> NIE should develop a comprehensive policy on its role in dissemination, should conduct programs that are consistent with that policy, and should implement effective procedures for the dissemination of the results of the R&D it supports. (p.47)

Finally, in an Addendum to their report, dated August 9, 1979, the panel added this recommendation:

> Recommendation #1 The NCER, in consultation with NIE, should articulate an overall policy for the building of an R&D system and ensure that the Institute's strategies for support of research, development and dissemination activities reflect this policy. The elements of such a policy should include:
>
> a. articulation of the links between lab and center missions and the other R&D activities support by the Institute.
> b. fostering of collaboration and communication between labs and centers and other R&D resources and networks, including the full development of the dissemination capacity of the 50 states.
> c. continued development of constituent participation in defining what is needed from research and involvement in its production and dissemination.

d. consideration of new training and human development needs to facilitate dissemination.
e. integrating into the routine operations of NIE an ongoing synthesis and assessment of the impact of R&D supported by the Institute and others. (Addendum, p.2)

In sum, the panel report generally lauds a group of organizations, labs and centers, for the competence of their staffs and quality of their work. The panel found mismanagement from the Federal level responsible for past problems or weaknesses but also found increasingly thoughtful direction emerging from NIE over time. The panel expressed concern about the dissemination efforts of labs and centers and the lack of a coherent policy regarding dissemination within NIE, while also pointing out that no uniform policy would be applicable. The panel found that the labs' needs sensing and technical assistance activities were important parts of dissemination effort and found the potential of the RDx exciting.

Research and Development Exchange (RDx)
(The scope of work specified review of the two-volume work by Radnor, et.al. Subsequent conversations with Ward Mason, at NIE, and Sue McKibben, at FWL, has led to the inclusion of--and greater emphasis given to--reports by: the Regional Program Unit, DIP program,NIE; Lallmang; and Emrick and Peterson. This was done because the Radnor work consists, entirely, of conceptual/planning papers, while the latter three are reports of actual practice.)

Information Dissemination and Exchange for Educational Innovations

The ten chapters of these two volumes offer varying perspectives on how an RDx system might best be described. Of particular interest are three chapters--Chapters 1 and 10 (of which Chapter 10 is a revised version of Chapter 1) and Chapter 7. Chapters 1and 10, "The R&D Exchange: An Emerging Effort," chronicle the assumption sets and underlying strategies of those who were directly involved in the early thinking about the RDx (the RDx planning group). Basic assumptions included: the effort will be, throughout, collaborative, involving the entire educational community;

activities engaged in will be complementary and supportive of other agencies; the effort will be developmental and coordinated; it will explore alternative strategies and solutions and will deal with a variety of problem areas and clientele; it will use a "linkerage/brokerage" strategy and will depend on NIE for core support while also seeking contributory support; finally, it will work to "ensure equity." (p.11-13, Klein, McCann, Saily) The entire RDx planning effort was based on the notion that a single--across the board for all institutions--dissemination policy was undesirable and the extensive linkages and two-way communication flows between knowledge producers and users were essential.

In Chapter 7, "The Balanced Producer-Client Linkage Exchange," Lingwood and Havelock begin with the important warning that many knowledge production and utilization (KPU) projects reflect the assumptions/biases/truth tests of knowledge producers. Their conceptual mapping may be only somewhat overlapping with that of actual knowledge users or clients.

> KPU efforts are seen as needed and are designed by information producers or intermediaries. The reasons are simply that producers and intermediaries are rewarded based on the extent to which their products are disseminated, recognized. . . and put to use. (Lingwood, p.3)

"Needs sensing" approaches commonly used to determine what the client thinks often suffer from two problems: they take as a given the client's conceptual approach and "they almost always begin with needs for information and not broader needs. . . " The chapter goes on to detail two polar approaches, the RDD&D and the problem-solver approaches, pointing to the weaknesses of each. Finally, the authors recommend that RDx strive for: a true philosophical consensus among all stakeholders; building the strongest possible links to all other linker/brokers; cultivating and broadcasting an image of client-centered resource

linking. (p.15-16)

These three chapters of the Radnor work seemed useful in anticipation of the RDx work. What follows below are accounts of actual practice.

The Research and Development Exchange: In Support of School Improvement, Regional Program Unit, Dissemination and Improvement of Practice Program, NIE, March 1979.

A Description of the Regional Services Program, Lallmang, Richard A.; (Dissemination and Improvement of Practice Program, NIE) July 1980.

The NIE Regional Programs: Evolution of the R&D Exchange and Regional Service Components, Emrick, John A. and Peterson, Susan M. , (System Support Service, FWL) April 1980.

Taken together these three reports detail the actual functioning to date of the Research and Development Exchange (RDx) and the Regional Services Program (RSP). While these are two separate programs, they share some commonalities. Both are designed to bring R&D based knowledge to bear in efforts to improve schooling. The Regional Program Unit report deals solely with the RDx, the Lallmang report, solely with the RSP and the Emrick and Peterson report, with both.

RDx

The context within which the RDx sets about task fulfillment is portrayed clearly in the opening pages of the Regional Program Unit report. First, federal policy and funding by the late 1970's "shifted from support for production of new starts to more effective delivery and use of existing outcomes." Next, it has become clear in the past two decades that "R&D products and programs, when implemented with fidelity, do make a difference." Finally, it is now eminently clear that "increased practitioner involvement is needed to ensure the responsiveness

of future R&D sponsors and producers with respect to the"production, synthesis and delivery of new knowledge." (Regional Program Unit, p. 1-2)

The goals of RDx include: coordination of dissemination/school improvement programs; promotion of use of R&D outcomes; provision of information, assistance and/or training; and, affecting future R&D outcomes by bringing to bear client needs. The RDx effort is: user-driven, developmental, coordinated and represents a responsive network. RDx clients are, primarily, intermediary agencies (although the ultimate clients are, of course, students, teachers and within-building administrators). The "pivotal client group" is the State educational agencies (SEAs) and their dissemination and school improvement staffs. (Regional Program Unit, p. 3-4) At the time of this report, there were seven regional exchanges, four central support services, an executive committee, and an advisory group. The seven regional exchanges were all housed in regional educational laboratories as were three of the four support services, with the fourth housed at a university center.

an inadequate summary. It is still more goals than practice.

RSP

According to the Lallmang report the defining characteristic of the RSP is that services provided entail "the application of existing R&D processes and outcomes to the solution of short-term problems identified by the clients in the region served. . . "(Lallmang, p. 1) The RSP, at the time of this report, was located in five laboratories where service was provided primarily, though not exclusively, to SEAs. Because the service provided is field responsive and because service delivery techniques vary, a uniform, detailed description of the RSP would be impossible. The services and the needs met differ by program, but in some way, each is related to issues of "educational policy, planning, evaluation and curriculum." (Lallmang, p. 1) The report states that variations in service delivery are supported by NIE so that the Institute

can study this variation.

RSP projects have as defining characteristics that: the service-provider is primarily accountable to his client, rather than NIE; service tends to be intensive and of short duration; the target audiences, while primarily SEAs, include others as well; and, these audiences are defined as a function of the selected problem and problem-solving strategy.

Whether or not "matching funds" are sought by an RSP project varies, but at NWREL, for example, NIE funds serve as "seed money" and generate performance contracts. From December 1, 1978 to June 1, 1980 the NWREL signed 101 contracts for a total amount of $926,285 while NIE's contribution to the program was $243,637. (The Lallmang report details the activities of all participating RSP projects, but the only financial information is that reported by NWREL.)

RDx and RSP: An analysis

The Emrick and Peterson report is the most discursive of the three and discusses both programs. Their report includes an historical overview and analysis, as well as reportage, of the efforts underway.

In their review of federal efforts related to educational dissemination, the growth of three important understandings is detailed: the need for human extension agents with teaching backgrounds to disseminate knowledge; the need to incorporate a practitioner orientation in knowledge products; and the need to view the educational R&D enterprise not as a "system" but, in Clark and Guba's terms (1974) as a "configuration." (Emrick and Peterson, p.6-7) These understandings were incorporated into the plans and assumption sets of the Dissemination and Resources Group at NIE. Early thinking in this

group about regional programs took these needs into account and used them, in effect, as specifications for work in the field.

So, when looking at the RDx, it is noticeable that all aspects are located at labs and centers, "an attempt to build direct linkages between a subset of R&D producers and other groups in the educational community." (Emrick and Peterson, p. 10) These organizations were assumed to have direct access "to a variety of products and expertise." (Emrick and Peterson,p.11) Structurally, RDx is a combination of centralized and decentralized functions, with resource access being in the latter category, and system support in the former. Emrick and Peterson point out that housing support functions in four separate organizations increases "the importance (and the difficulty) of coordination. . . (but also) the opportunity of obtaining the best available know-how in specialized areas of dissemination." (Emrick and Peterson, p. 11)

Their specific discussions of the mechanics of RDx and RSP echo the two reports discussed above and need no repetition. It is interesting to note their discussion of the interface between RDx and RSP. It is clear that the interface is not yet well documented or understood, but overall the authors suggest that RSP staff can be loosely understood to act as "application specialists" while RDx staff serve more to broker, link and disseminate knowledge. Their report suggests questions for further research, but concludes that the components are in place for a concerted effort in knowledge exchange and the transmission of specific technical assistance. "The likelihood of major and demonstrable educational improvements attributable to this program configuration is very high." (Emrick and Peterson, p. 25)

"Organizations that Perform Educational R&D: A First Look at the Universe," Educational Researcher, Sharp, Laure M. and Frankel, Joanne. Performers of Research and Research-related Activities in the Field of Education, Frankel, Joanne, Sharp, Laure M., and Biderman, Albert D.

This article and report describe the process of compiling, and the actual contents of, the American Registry of Research and Research-related Organizations in Education (AAROE). It is clear that care went into the selection of organizations for inclusion, each having to meet particular criteria.

For the purposes of this analysis, only a few key points from the AAROE are relevant. First, a quote from the summary section of the report puts its major findings succintly. The universe of organizations in this field is:

> -large--2,434 active organizations were identified;
> -dominated--in terms of numbers--by small organizations, i.e., those with education RDD&E expenditures below $150,000 and fewer than two full-time professionals with primary responsibility for education RDD&E;
> -dominated--in terms of expenditures--by the 172 largest performers, which although they consitute only seven percent of the universe, account for nearly 70 percent of all expenditures;
> -diverse--with the primary mission of a majority of organizations lying outside the research field;
> -dispersed throughout the nation--but with large concentrations in New York, California, Ohio, Illinois, Texas, Pennsylvania, and Washington, D.C.; and
> -young--with 40 percent of the organizations created during the last ten years.
>
> (Report, p. 94)

When we think about organizational capacity for effecting school improvement, it becomes clear how few organizations possess such capacity. Few organizations specialize in educational R&D. Few have a critical mass of expertise. Few have any prolonged experience or history of interaction with other educational actors.

In terms of activities conducted by these organizations, the researchers found:

> Practically all organizations spend at least some of their funds for research, but research is emphasized most heavily in the academic and private sectors, while development and evaluation studies dominated in public education agencies. Dissemination emerged as the area of lowest emphasis, receiving the smallest allocation of funds by performers except for state agencies and large public school systems. (Educational Researcher, p. 9)

They suggest, further, that "more activity must occur in the public education arena as these agencies can be more quickly and cogently responsive to practitioner need."

In sum, the experience of compiling the AAROE points to few capable organizations, a need for more emphasis on dissemination and a need for greater involvement of staff from public educational agencies.

Section 2, Analysis of Reports

The works discussed in the first section of this analysis include: two major review focussing on labs and centers--the Campbell and the Panel reports; conceptual papers, two reportial accounts and one analytical report re:RDx and RSP; and a major piece of research on the universe of R&D performers in education. Only one of the works is actual research. Only two of the works, the first two, are actually comparable, in the sense that these both look at labs and centers and their relation to the NIE.

Yet, the works in toto, and in addition the knowledge possessed by this author, can be viewed as giving clues, at least, to the major question posed. That question--How do labs and centers operate with regard to dissemination and school improvement?--is however not the major focus of any one of the individual documents. It becomes an interesting, albeit not simple, task to infer the answer. That answer might best be approached by analyzing these works with an eye to generating certain key propositions. This is done in order to distill the experience of these organizations over time and to assess their capacity for school improvement.

Healthy organizations show signs of organizational learning, development and refinement of understanding about their major tasks. Such learning has occurred in both the set of labs and centers and the sponsoring agency, NIE.

The first university centers were established in 1964. The initial laboratories were set up in 1966. When the centers were established it was thought that such organizations would "do everything"--research, development, evaluation, dissemination, implementation. (Salmon-Cox, 1978;

Boyan and Mason, 1965) The creation of the regional educational laboratories (RELs) actually clarified the mission of the university-based centers, while beginning a long-standing confusion over the appropriate mission of the RELs themselves. (Salmon-Cox, 1980a, 1980b) For, with the appearance of the RELs, centers began to concentrate heavily, though not exclusively, on research and development. RELs, on the other hand, suffered from unclear definition of purpose, as was noted in several of the reports.

However, what becomes clear, especially by comparing the judgements of the Campbell report to those of the Panel report, is that RELs have begun to coalesce around certain key functions. This is true if one looks across the entire set of labs, despite marked differences in their structures and scope of activities. Among the key functions for which each REL appears to have capability are dissemination activity, technical assistance and resource brokering and exchange. Additionally, each REL is in touch with and responsive to the needs of its region. While there remain regions of the country unserved by an REL, where these labs exist service is being rendered and some educational needs are being met specifically by that organization.

Centers have come to be problem-oriented, conducting research and development consonant with NIE's priorities. Those priorities result from Congressional mandate, as well as the thinking and direction of NCER and the NIE leadership. In a very clear sense, then, one can say that centers, currently, are working on those problems deemed the most important.

NIE also has demonstrated that it has learned from criticisms or weaknesses of the past. This is particularly true in two areas important

to consider here: the direction and management of labs and centers; and the structuring and implementation of dissemination activity. First, the Campbell report made clear that the then current "program purchase" policy of NIE had had deleterious effects on labs and centers and, further, that the monitoring and management of the organizations had been uneven and confusing. By the time of the Panel report, NIE had returned to institutional support and long-term agreements with the labs and centers. Second, a theme that runs throughout the reports reviewed (and one emphasized heavily in the thinking about implementation of the RDx) is the need for NIE to systematically plan and implement disssemination activity. It is now apparent that NIE has taken this advice seriously, funding planned variation studies--as was recommended--both within the context of RDx and other dissemination activity.

In sum, while the Campbell report found fault with both labs and centers and NIE, the Panel report endorsed long-term funding for 7 of the 8 RELs and 7 of the 9 centers, finding them healthy and productive organizations. While the Panel report offered considerable advice to NIE, the agency as reflected in that report and in its own record of activity in the past several years has also demonstrated its learning capacity.

Institutional capacity is essential for complex problem-solving.

Both the Campbell and the Panel reports reaffirm the need for institutionalized capacity for educational knowledge production. While the individual researcher or small group can contribute signfficantly to educational research, development activity, large-scale evaluation, programmatic interdisciplinary research and any reasonable form of resource sharing, allocation and brokering, are all activities better

suited to organizations than individuals. The deliberate decision to house the RDx and RSP programs in RELs was also based on the recognition that organizations were essential for these tasks, as well as the further refinement that these were organizations with already existing structures (governing boards, existing networking facilities) and staff capabilities suited to these tasks.

Centers, also, have engaged in work over time that requires an institutional base. Emphasis of activity within centers has shifted from program and product development to programmatic basic and applied research. In both cases, the ability of a university center to attract a critical mass of scholars from multiple departments and disciplines has been crucial to the kind and quality of knowledge production undertaken. Throughout the Panel report, including the individual site visit reports, centers are given high marks for the work each does.

Another theme that was prominent in the past five years was the need to incorporate the perspective of women and minorities in educational research. NIE developed a program to accomplish this, and many labs and centers participated in training programs. In fact, the first round of funded proposals in this area went exclusively to labs and centers as the most appropriate places to begin such a program.

For the tasks undertaken by both labs and centers it is essential to have an institutional capacity. What both kinds of organizations have are core staffs of sufficient size and training, organizational support services, and the ability to plan and carry out long-range programs of work.

Mission orientation is essential for efficient and high quality goal realization.

It is clear from the historical record that both labs and centers have grown in their capacity to focus in on certain functions and problems. From the diffuse notions about organizational responsibility of the '60's grew more sophisticated ideas in the '70's about what each kind of organization might hope to accomplish. Again, as noted in the reports, there is wide diversity in activity among the labs and centers. But, overall, it is the case that centers tend to focus on programmatic R&D, while labs possess strong capacities, especially, for technical assistance, knowledge brokering and networking. In the past several years, under direction from NIE, many labs have come to work closely with SEAs and LEAs. The relationships so established are crucial to school improvement efforts.

misleading

In the area of dissemination activity, important facilitating mechanisms are now understood and being put to use.

Throughout the reports reviewed, dissemination is clearly an area of concern to many. Both the Campbell and Panel reports paid special attention to it; the RDx and RSP programs are in direct response to the perceived needs in this area. As the entire domain of educational knowledge production took on clearer shape in the past twenty years, various types of dissemination activities were tried and variously found wanting. In large measure, early efforts probably suffered from overreliance on models for dissemination borrowed from other fields (agriculture, space technology, etc.) Slowly, the particular constraints and opportunities offered by the American educational scene became more clear. Both organizations in the field, but especially NIE, have shown that they have learned from experience and from advice. Current dissemination efforts emphasize these lessons:

-the need for regional networking, involving multiple stake-

holders, and utilizing human communication (as opposed to simply disseminating printed information);

-the need for national coordination of resources, so that problems of one region may be met by proven solutions developed elsewhere;

-the need for planned variation in dissemination strategies, recognizing the decentralized, locally-based nature of American education;

-the need for continuous, long-term communication, as opposed to "single-shot" consultant visits;

-finally, the need to take the position, in many areas, that knowledge does exist which can be applied to immediate problems. "More research is needed" may be true in many important substantive areas, but a great deal has been learned, of use now, that can be applied.

Practitioner involvement, judiciously structured, is a key element in dissemination.

This point is important enough to be singled out on its own. Both organizations in the field and the NIE have come to understand that the users/clients/practitioner groups (the label having varied over time) must be involved in many aspects of knowledge production. In the area of dissemination their involvement is crucial. Yet, the structure of that involvement must be carefully thought through. It is the case that there is a gradient of expertise vis-a-vis research as one moves from labs and centers to school buildings. It is neither reasonable to expect teachers to accept ready-made "solutions" to problems they may or may not think they have, nor to expect researchers to have their problems and strategies totally defined by

practitioners. The several reports reviewed displayed increasing sophistication in the field regarding appropriate levels for intervention (SEA,LEA, building level, etc.), depending on the problem to be solved, and styles of interaction, again depending upon problem and level.

RELs possess the more visible school improvement structures, but university centers also are engaged in such activity.

It is clear from their mission that RELs engage in school improvement activity. Centers, however, focus on research and development and in recent years, most heavily on research. While that research is clearly related to pressing educational problems, there remains the widely acknowledged "gap" in terms of time between research findings and implementation.

However, all of the centers engaged in some form of product development in their earliest days. Many continue, in some way, to be involved directly in education through these products. (E.g., two centers--and two laboratories--remain as sponsors of the national Follow Through effort; several centers engaged in continuing evaluation of product effectiveness.) These efforts can also be viewed as school improvement activities.

Finally, several centers--and one, in toto--have evaluation research components. It is in the nature of such research that direct involvement with school settings is inevitable. This involvement does not, course, necessarily result in immediate direct improvement efforts, but it can. As an example, the evaluation research unit at LRDC, under the direction of William Cooley, is currently engaged in a comprehensive set of school improvement activities jointly planned and executed with the Pittsburgh Public Schools. As this is nowhere recorded

in the documents reviewed, it is reasonable to assume that other, similar efforts may also be underway, unknown to this author.

RELs and university centers are organizations each specializing exclusively in knowledge production functions for education. There are, at present, no functional alternatives to these organizations.

A cumulative thrust of all of the reports reviewed was the recognition of the importance of the role played by labs and centers. The Campbell report, the one most critical of the labs and centers at the time, spoke of the need for such organizations and endorsed the idea of "national laboratories." The Panel report , several years later, found strength in most labs and centers and again heavily endorsed the concept while pointing to areas for improvement. The RDx and RSP programs rest on a foundation of institutional support provided by labs and centers. Finally, the Frankel, et. al., research makes eminently clear how few organizations there are: of critical mass; of expenditures at a level commensurate with complex problem-solving; and, most important, whose missions are totally committed to the domain of education.

Important roles are played by SEAs, LEAs, profit-making research organizations, schools and colleges of education and individual researchers. Yet, no one of these actors or collectivities has the capabilities offered by labs and centers, either individually or in some form of consortium.

Section 3, Recommendations

The recommendations that follow grow directly from the first two sections of this paper. They are stated in parsimonious form, as the rationales for each are contained in the preceeding analysis.

I. Improving American education is contengent upon building and maintaining the scientific understanding of educational processes.

Education is a profession, as is medicine or the law. The profession deserves and needs knowledge bases on which to act rationally and from which improved practices are developed. These bases are varied and, when applied to specific problems, must be adapted to the requisites of that problem. Neither by hunch nor through intuition can school improvement be best or efficiently conducted. Particularly in a time of declining resources, an ethic of efficiency combined with a desire for efficacy argues for sound investment. As in other fields, developing the sciences of education is among the most sound investments. The development of these sciences is, of course, not limited to the activity of institutions, but is well represented by their work. If, in the '60's, as educational research first seriously burgeoned as a field, it seemed possible to fund any and all ideas about how to improve schooling, then, in the '80's, as our possibilities diminish, it is imperative to fund those people, and their ideas, most likely to make a difference. Those people are both individuals and organizations of individuals attempting through research to find, develop and implement solutions that work.

II. Greater coordination of existing resources is desirable.

In order to maximize the potential of what is now known and available, NIE should exercise leadership in coordinating existing resources. Leadership and coordination do not imply uniform policy

as NIE seems to have apprehended already. The Institute should continue, for example, to encourage planned variation studies in the area of dissemination, as the best wisdom on the subject currently suggests.

Yet, it is apparent that there has been insufficient funding for coordination,e.g., for RDx personnel to meet, share experiences and learn from one another. Within the CEDaR organizations, there is a nascent project on school improvement, attemtping to bring together participating organizations' experiences. Recently, educational researchers within AERA have discussed the possibility of mounting school improvement efforts to demonstrate the efficacy of educational research. There undoubtedly cannot be too many such efforts, but clearly the locus of leadership should be at NIE, not in any one particular professional or other group.

Within the Institute, in the minds and experiences of project monitors, program personnel and intramural research personnel, resides a large body of knowledge. That knowledge includes awareness of lab and center programs as well as of a host of other programs, and needs, nationwide. That knowledge should be more systematically organized and put to use, coordinating problem-solving in the field.

III. University centers should be encouraged to be flexibile in their scope of activity.

In the area of technical assistance for school improvement, the RELs are clearly structured to meet certain needs. Their capacities have been enhanced by the development of the RDx and RSP programs. Having suffered for years from unclear institutional definition, the RELs now have coalesced around these functions and are providing important service. The situation for university centers is less clear. While

it seems likely that all are engaged in some form of direct work with schools, centers' emphases are on research. Yet, the research is instructionally or policy related. It is the nature of such research that it pushes to action. Instructional research well structured must inevitably yield prototype if not larger development efforts. Policy research must also for validation result in plans actually implemented in ongoing educational settings. Too narrow a definition of the appropriate activity for university centers will weaken their efficacy and be wasteful of their potential. NIE policy must be more clear on this point.

IV. Institutional support for labs and centers must be maintained.

Institutions offer the capability for sustained, effective work on educational problem-solving. The most important and complex problems in education do not lend themselves to quick or simple solution. Whether to continue to build the knowledge base on which school improvement will continue to depend, or to continue the effort of bringing to bear what is now known and ready for application, it is essential that organizations, qua organizations, be maintained. In order to do this, there must remain sustained policy vis-a-vis these organizations, long-term funding, high quality review on a regular basis, and the planned phasing-out of areas of work no longer productive or relevant.

The author is most mindful of the current political climate. Funding for the NIE has been severely reduced; the Institute's contractual obligations are large. It would be easy to say, and should be said, that current federal expenditures on educational research are totally inadequate, do not reflect the productivity of the field as a whole, and must be increased. Yet, that kind of

recommendation is beyond the scope of this analysis.

There is currently a cry for "open competition." What this translates into for institutions and individuals must be carefully planned. Any return to "program purchase" policies for programmatic R&D institutions, such as labs and centers, would vitiate the institutional capacities so carefully nurtured, even through past, uncertain times. NIE policy must recognize distinctions between institutional and individual capability. It serves neither individuals nor institutions well to inappropriately structure competition.

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