admit that excessive harvesting of primate populations may be detrimental, but we also think that other ecologic and social forces are equally detrimental and, in the long run, more serious. The greatest threat to primate populations throughout the world is alteration of the environment, through deforestation, slash-and-burn agriculture, poaching, jungle warfare, food shortages, and excessive utilization of herbicides and defoliants.

For the research community, the practical problem right now is to attach the blame for attrition of primate populations where it belongs: on these corrosive conditions and practices. It is imperative to secure sound field data, in quantity; to bring into more exact focus the true ecologic picture; and to support with this increased flow of data a new thrust in the management of a wise course of conservation practices and programs.

Another danger in excessive alarm is the possibility that some countries may prohibit all export of primates, considering this adequate protection. This would end the activities of legitimate dealers, those with the best and most humane programs, and would stimulate undesirable illegal trade. It could accelerate losses and damage to primate populations by driving the business underground and taking it out of the arena of legitimate governmental and scientific regulation. It would divert attention from the real needs of habitat conservation and scientific management.

At present our most critical need is to obtain data on the population status, trends, and reproductive biology of primates that are used in biomedical research or that represent endangered species. We know little or nothing about the population status of squirrel monkeys, owl monkeys, marmosets, pigtailed macaques, cynomolgus macaques, rock macaques, gibbons, vervets, talapoin monkeys, and several other species of primates that are already important in research. There has been a great flurry of field studies on primates in the last 15 years, but these have been primarily behavioral in nature, and the entire subject of primate population ecology has been neglected.

Although use of primates in research may level out or even decline for a few years, the long-term demand will certainly increase. In the meantime, the inexorable forces of ecology will operate on indigenous primate populations, and they most certainly will be detrimental.

We feel that two major types of programs should be initiated as soon as possible: (i) a coordinated and well-planned program of population research to provide more accurate data on the ecologic status and reproductive biology of important species of primates, and (ii) active conservation programs for all endangered species and all species that are directly utilized in biomedical research. The population surveys are necessary to provide the data on which sound conservation practices can be based. The conservation programs are essential to insure that some of the world's important primate species will still be here 10 years from now.

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10. Urban monkeys, as distinct from forest dwellers, are groups resident in cities, towns, and villages. They frequent temple areas, railway stations, roadsides leading into the cities, and bazaars. While generally tolerated by people, urban monkeys (outside of temple areas) are often threatened or disturbed in crowded areas. The monkeys in temple grounds are fed and partially protected by local people, yet temple rhesus are more aggressive than forest-dwelling rhesus.

11. The work discussed has been supported by grants from the U.S. Education Foundation in India, and by grants from the National Institutes of Health to Ohio University and Johns Hopkins University. Since 1962, our continuing census work in India has been under the guidance of the Johns Hopkins Center for Medical Research and Training, based in Calcutta. We are indebted to M. A. Beg, R. K. Lahiri, M. Bertrand, P. Jay, D. G. Lindburg, M. K. Neville, and R. P. Mukherjee for field assistance; to M. B. Mirza, J. L. Bhaduri, F. B. Bang, C. Wallace, A. Craemer, R. Yager, H. Kingman, and N. Alim for administrative support; and to B. Harrisson for reading the manuscript.

Policy Framework for Educational Research

A seven-part structure is described for analyzing research policy initiatives.

Hendrik D. Gideonse

Major new research initiatives have been proposed by the Nixon Administration in the field of education. The President himself proposed in his education message that a new National Institute of Education be created to house, sponsor, and coordinate an improved and expanded federal effort in educational research and development. Experimental schools were high on former HEW Secretary Finch's priority list. Meanwhile, it is being suggested that existing programs be focused more sharply on problems of great importance, areas of potential promise, or outputs of potential impact.

These new initiatives follow a 3-year period during which educational R & D has been subject to no less than 16 studies or reviews, 13 bearing directly on the field or major portions of it and the remaining 3 embracing it as part of their broader concern for the behavioral and social sciences generally. The most thorough of the reviews was recently completed under the sponsorship of the Organization for Economic Cooperation and Development (OECD) (*1*). This review firmly documented the absence of any *de jure* national research policy for education. Nonetheless, rapid development in this field in the past 4

or 5 years reveals the fact that considerably deeper thinking is required about research and development policy for education. Such thinking must be done to avoid costly financial and political errors. It must be done to move research in directions of responsible service to education and society. At the same time, however, the scholarly and academic requirements of a healthy scientific establishment for education must be met. It is in this light that I have developed the following framework for considering educational R & D policy (*2*).

Elements of Research Policy for Education

There are five primary elements which appear useful for analyzing, developing, and implementing research policies for education. These may be conveniently identified in shorthand form as: (i) contexts; (ii) goals; (iii) research definitions, models, and descriptors; (iv) manpower and its location; and (v) decision structures. These elements are neither separate from one another nor hierarchical. Each is an essential component in research policy and interacts with the others. As each of the elements is described, therefore, their interactive character should be kept in mind. These primary elements embrace those essential notions which we must understand when developing and executing research policy. The interactions of the primary elements also lead to two secondary elements: priorities and objectives, and strategies and tactics.

Contexts

There are at least four contexts in which research policy issues in educational R & D operate. These are: (i) social, political, economic, and philosophical contexts; (ii) educational policy issues; (iii) educational systems, both core and peripheral; and (iv) science policy.

The first of these, of course, is the broadest context within which educational research operates. Education exists to serve society and individuals. For example, we must have a knowledge of our past, as Lawrence Cremin put it (*3*), so that we shall not be tyrannized by our myths. We must have a knowledge of our present with its achievements and its problems. We must understand the alternatives open to us in the future. We must have some grasp of the philosophies which guide the nation's view of education and its understanding of children both as learners and as present and future citizens. In the understanding of these issues educational priorities emerge to provide guidance for substantive R & D.

The second context is education policy. The purposes and goals of our educational system form part of the structure within which research questions will be framed. This needs to be understood in terms of immediate, short-term, middle-range, and long-range goals. A good command of this contextual factor is essential.

The third context is the educational system itself. Educational research and development is intended to provide insights whereby educational functions can be improved. It is essential to know the established structures charged with or performing educating functions in our society, how they operate, what their traditions are, and how they view themselves.

We must attend not only to the core system but to the periphery as well. Not only do we have elementary and secondary schools, technical institutes, 4-year colleges, and universities, but we also have the home, mass media (particularly television), continuing education in business and industry, the military, the Peace Corps, VISTA, and so on. The core and the periphery are the institutions, agencies, and programs whose functions R & D will alter, improve, or supplant. They must be fully understood for effective and rational R & D programming and decision-making to take place.

Finally, the last context within which educational R & D operates is science policy. Resources available for R & D in education are part of the national resources for scientific research. As such, they come under the same policy review procedures for science in this country and compete with other requests for funds.

Goals

The second primary element in the research policy picture concerns the goal for R & D. This may be an obvious point, perhaps, but it is an important one. By goal I do not mean the specific objectives, strategies, or tactics which are being supported or used at any given time. Rather, I refer to the way we view the ultimate purpose of educational research. We can see educational R & D in two ways. We can support and manage it because we are aiming to produce more knowledge about learning and instruction that *might* in some way or other improve education. Or, we can support it because our purpose is *to bring about* the improvement of education. In the first case the goal is the pursuit of knowledge. In the second, it is the improvement which is sought and the creation of knowledge becomes a means to that end.

The issue is never as black and white as I have presented it above, of course. But where the emphasis falls is of tremendous importance. Different clientele and constituencies become more or less important depending upon the choice taken. Perhaps even more important, if improvement is the goal, policy makers will find themselves much more deeply involved in political and social issues of educational output (or supply) relative to educational desires (or demand). The key word is "improvement." This means comparisons will have to be made between what is and what is desired. Issues involving costs, efficiencies, effectiveness, benefits, and interests of many kinds will daily consume the energies of R & D policy makers.

These concerns obtain under either the knowledge-choice or the improvement-choice. That it is more pervasive under the improvement-choice seems quite clear.

Research Definitions, Models, and Descriptors

The third element is complex. It embraces our understandings about what educational R & D is and is not, how it "works" or why it doesn't. This element turns our attention to definitions of research, development, experimentation, evaluation, diffusion, dissemination, and demonstration. Here we are concerned with the various means for discovering knowledge and the means by which different kinds of knowledge find application in educational practice or policy. This leads us to consider the ways in which the many kinds of R & D functions might relate to one another under varying conditions and circumstances. This third element is concerned with the many natures of educational R & D and with the models we use to

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understand it, ask questions about it, and manage it.

Another dimension of this element is an understanding of the disciplines and technologies of educational R & D. The behavioral and social sciences, the information sciences, the humanities, and the biochemical sciences appear to cover the range in this field. (A new science just emerging may very well yield additional exciting areas for educational research in the future—the science of varied states of consciousness including hypnosis, research on hallucinogens, psychiatric research, autonomic feedback, and the like.)

Finally, with this element the policy analyst must decide how, if at all, educational R & D differs from other branches of science. For almost 6 years now I have been amazed that a field such as educational R & D so obviously in need of expansion should be the subject of so much foot-dragging, criticism, and controversy. The result has been extremely begrudging support from the public treasury whether local, state, or federal. We have wrestled with every aspect of the problem. Only recently have I been able to understand why this situation should be characteristic of educational research (and, for that matter, any mission-oriented behavioral or social science research program).

The natural, physical, and biomedical sciences operate on premises quite different from those in educational, behavioral, or social science research. The essential difference is that in the behavioral and social sciences virtually all of the objects of research or variables under study either possess free will (that is to say, they are self-conscious) or are inextricably embedded in a value structure of some kind or other.

I am not saying that the outcomes of physical and biomedical sciences don't relate to choice or values. Clearly they do. Nevertheless, the materials, units, and variables involved are not of themselves self-conscious, possessed of free will, or value-laden. Atoms do not choose nor do chemicals or glands. But learners, parents, society, and institutions do. Rats and mice possess no human values nor are human values involved in the intricacies of a high-energy physics experiment. But learning itself *is* a value. Failure of achievement in any large-scale experiment involving children or adults is a value question. Indeed, all matters involving education, welfare, or social futures are inextricably bound up in questions of worth, propriety, and preference.

What this means is crucial. If educational R & D or any mission-oriented behavioral and social science research enterprise is in its practice as well as its implications value-laden and choice-rich, then science as it supports education is as much a social and political activity as it is a scientific one. This is an extremely important, if complicating organizing principle.

Manpower and Its Location

The fourth primary element in educational R & D policy focuses on how manpower roles and requirements are defined and where those kinds of manpower can be found.

For example, if we consider that academic researchers, scientists, and scholars should do educational research, we will look where such people can be found, primarily in colleges, universities, and specialized research institutions. If, on the other hand, we believe that those who are likely to uncover new knowledge of benefit to education are those who are most familiar with education, then we might be likely to look to the professional faculties of education or operating school systems. Or, if we were to follow one interpretation of the political and social dimensions of educational R & D, we might look to practitioners, parents, or even learners as a source of manpower for such efforts. Any combination of the above, and perhaps other views not spelled out here, would be equally viable.

Here is the interaction of the primary elements. How we define the manpower requirements in part follows from how we define the field. And how we define the manpower and the field will determine what kind of manpower is available, where it might be located, and what it would require financially, administratively, or politically to utilize it effectively.

A word about reward structures. The operating principle here, colloquially, is "different strokes for different folks." What this means, simply, is that scholars don't get their kicks from the same kinds of things that school administrators do, and experts in development, diffusion, and so forth may well respond to still other kinds or reinforcement. This fact is particularly important for clarifying what kinds of response can reasonably be expected from different kinds of people performing a wide variety of R & D functions.

Decision Structures

The last primary element in educational research policy focuses on decision structures—what kinds of decisions have to be made, how they are made, and who makes them. As in each of the other elements, we ask not only what the situation actually is but what it ought to be. Obviously the interaction with other elements is critical. How R & D is defined affects the nature of the decision process and who is involved in it. So will the analysis of the contextual issues. Depending on the emphasis given to the role of the science policy context as contrasted to the educational policy or educational system context, differences will emerge in structure and in the personnel involved. For example, one traditional method of managing federally sponsored R & D programs is the system of approval granted by a panel. When an agency is not mission-oriented or is supporting fundamental research, this is an appropriate structure to use.

When agencies have more specific missions, however, this procedure must undergo a shift. Now the people selected to serve in advisory capacities must have the expertise required to decide what panels should sit in the first place, or what proposals should be requested, or perhaps even what research or development procedures should be followed.

Congress enters the decision structure when it approves the establishment of a research institute in NIH. Other staff personnel located anywhere in the federal government may successfully propose specific activities within the R & D program. When they do, they become part of the decision structure. Priority development mechanisms, planning procedures, and the arrangements depicted by the classic organization chart all comprise the decision structure.

The decentralized, multijurisdictional character of education in this nation is an important determinant for the educational R & D decision structure. There is no national educational policy which alone defines educational R & D priorities and objectives. Therefore, at the policy level, decision structures must link many types of institutions and agencies in the educational system. In actual performance, decentralized educational policy could lead to decentralized management of educational R & D.

How this fifth primary element of research policy interacts with others

should be clear. If educational research is seen as a social and political enterprise as much as a scientific one, then the decision structures will reflect that. If people other than scientists are involved in making educational R & D decisions, then they must be accommodated at the appropriate time. In general, the decision structures established for conceiving, planning, and implementing R & D programs in education must be designed so that they agree with the other four primary elements.

I have already suggested a few of the ways in which the primary elements interact with one another. There is a useful way of explaining this interaction so that it can be clearer. Two secondary elements emerge as the result of interactions among the five basic ones. These are: (i) priorities and objectives, and (ii) strategies and tactics. The interaction of the five primary elements in the total framework is illustrated in Fig. 1.

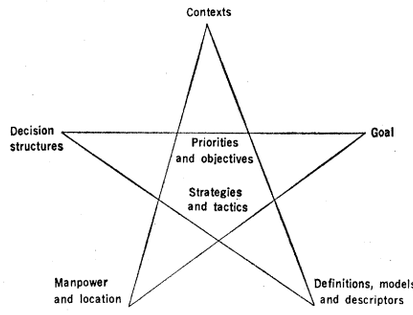

Fig. 1. A policy framework for educational research and development.

Priorities and Objectives

The development of priorities and objectives arises from the study of what society needs from its schools in the short-, middle-, and long-term period, compared with what it is getting. It is also based on an examination of the state of knowledge, the technical arts, and what R & D manpower is available to work with in the deficient areas (*4*). When these areas are identified, it then becomes possible to propose alternative objectives which will correct the deficiencies. Various criteria such as cost, benefits, scale, political acceptability, sequence of development, and so forth are of assistance in reaching decisions.

Strategies and Tactics

Similar interactions among the primary research policy elements determine R & D strategies and tactics. There are many different ways of carrying out research and development programs. The management strategies will depend in part on what needs to be supported, who is to play a role in that kind of activity, what the decision structures are or ought to be, and what models or conceptions of educational research the decision maker finally has in mind. A point to consider in this interaction is the conception of what kinds of manpower are required to play what sorts of roles, and what sorts of settings they are to be found in or in which they will be expected to do their work.

The usefulness of this policy model must finally be tested by applying the primary and secondary frames of reference developed here. Three policy proposals currently before us provide useful illustrations of how exposure to the kinds of questions suggested by this analytical framework can be beneficial. They are: (i) directed planning and programming of educational R & D; (ii) experimental schools; and (iii) the National Institute of Education.

R & D Planning and Programming in the Office of Education

The Office of Education has gradually been assuming responsibility for substantive direction and management of portions of its research and development program. In prior years OE's research program was almost wholly unsolicited; shifting that orientation has proven to be a complex, difficult, and sensitive task. With the new administration attempts have been made to strengthen the organization and location of the research effort. Renewed attention is being paid to how we might identify priorities, establish R & D objectives, and manage a substantial portion of the program to achieve those objectives.

Recently, as part of this general effort, an effort was made to develop some initial statements of purpose, objectives, and strategy focusing on a single priority area suggested by former Commissioner Allen's announcement of goals on 4 November 1969. Of three major goals which he identified, one was stated in the following way:

> The development of a nationwide strategy for maintaining a continuing process of improvement and relevance in American education. To achieve this goal we shall need to formulate a systematic, coherent plan for linking the processes of educational research, development, demonstration, evaluation and dissemination which will help get the best in material and procedures more quickly into practice by making them readily available in useful form to those who control, manage, and teach in our educational institutions.

Accordingly, a special working group was set up to explore the ways in which we could go about identifying specific objectives relating to this goal, and to make recommendations for action. Even before the group began its work, judgments about research policy had in effect been made. For example, stating the goal constituted implicit judgments about educational policy issues and the state of the educational system, as well as a judgment that research and development regarding this problem either was or could be made sufficiently coherent to develop a structure for directed programming. Similarly, by deciding to engage in a managed R & D effort, an explicit decision was in effect being made that there might be a new decision structure in this area at least (that is, the Office of Education would accept the responsibility and perform whatever linkage and coordination functions were required to accomplish the management task in a responsible and acceptable manner).

Soon after the planning group undertook this particular effort it became clear that they would need to articulate their understandings about research models for education, and how R & D functions relate to operating educational programs, institutions, and agencies. Of particular interest to operations researchers, for example, was the conclusion that so long as we were being asked to produce a research and development program designed to assist the educational programs of the nation, then it might be more useful to view our mission less from the academic research perspective and more from an operations research perspective. The planning group became convinced that, if education were conceived as a total complex interactive system, then mission-oriented R & D could properly be seen as operations research writ large; the R & D capability for the system should be thought of as intimately connected and linked to the operating whole.

The planning group in arriving at this conclusion was not for a moment denying that specialized institutions like universities and research corporations will be needed. But they judged the poten-

tial effectiveness of specialized institutions to be much greater if schools, districts, colleges, universities, and states were to have their own research capabilities and carried out their daily activities as if they, too, were engaging in inquiry (*5*).

The working group's views of educational R & D shaped the planning effort in other ways. For example, we in OE concluded we did not know enough to carry out the complete job. But even if we had had sufficient expertise, we became convinced we shouldn't complete the job ourselves. Without engaging in a great deal of communication with researchers, policy makers, and practitioners during the program development process, no matter what we produced would have been viewed with skepticism and distrust. If the program were to be viable and used by educational practitioners, everyone would have to be involved from the start. Again, this clearly reflected convictions regarding the political and social dimensions of educational R & D as an activity.

The development of strategies and tactics for a directed R & D program on educational organizations and systems provides further examples. How acceptable would certain approaches be on face value to the constituencies on whom we depend for either political support or for performing the work? What sorts of modifications might be desirable to further develop and enhance such support? Or, keeping a firm eye on social need, real or perceived, how much if anything should we sacrifice in scientific elegance in order to achieve some measurable benefit now rather than greater elegance and three times as much measurable benefit perhaps 3 years from now? This entailed some consideration of the strength of social demand, for example, relative to the quite different requirements of the academic community. Here we see an explicit interaction of two different elements, social and political context and manpower and its location, an interaction made especially difficult, perhaps because of the operation of different reward structures and motivations.

Experimental Schools

A second illustration can be developed in connection with the request for funds to establish experimental schools.

Here is an example of a proposal founded on an understanding that educational practice and achievement are based on or employ, to good effect or bad, a very large number of variables and that many of these must be utilized simultaneously before substantial positive effects on student achievement will be observed. It is an R & D program emergent from some understandings based on previous research and development.

Operating again within the framework of the third primary element, it is useful to note exactly what experimental schools are and what their purposes are. Are they to experiment with new products and techniques to see what effects they have when combined with one another in the context of an entire school? Are they to demonstrate new and tested products and techniques to show others how they work so that the innovations may become more widely diffused? Are they to test new departures in the conceptions which underlie our establishment of schools or, to borrow T. S. Kuhn's notion, to experiment with the very paradigms on which instructional and educational practices are based (*6*)? Are they to be designed to mount the first sophisticated cost-benefit studies of educational practice? Are they to find out what works for target groups and areas where schools are presently failing?

Each of these purposes is different from the others. Some are compatible with one another; others are not. Some will use certain kinds of people; others will use different ones. Some will be very costly; others will be less so. Some will require very long periods of time for planning and community consent; others might require only a few months to initiate.

Decision structures will be involved. Where will initiative for experimental school proposals reside? What role might program managers here in Washington play? What will be the role of the community in which the school is ultimately established? What kinds of criteria will be required and who will develop them, within which project proposals and program designs are established and evaluated?

Consider manpower and its location. With one or another interpretation of purposes and definition, different kinds of manpower presently found in a variety of different places and institutions will be required. How can people be identified, located, interested, and employed? Or are they already in the schools where the experiments are to be mounted? And will the experiments be *in* schools or *by* them?

What of the larger social and political context? Where are the schools currently failing in the United States? What are the target groups that, as measured in terms of achievement, are not receiving an equal opportunity for education in this country? What roles do these areas or groups of people have in the experiments in deciding what should be done and perhaps *whether* they should be done? How will black militancy, community involvement, and demands for self-determination be an essential frame of reference for this program?

National Institute of Education

Finally, on a third and much larger scale, let me list briefly some of the questions the framework suggests regarding the proposed National Institute of Education (NIE). The Institute proposal envisions nothing less than a total reconstruction of the administrative structure for R & D efforts in support of education. Not only is it designed to create a new atmosphere and climate for educational research, but ultimately it will absorb many of the R & D activities presently administered by OE. It is intended to play an important coordinative role with other related R & D efforts scattered across the federal structure in such agencies as OEO, NIMH, NICHD, NSF, and the Defense Department.

Certainly one of the central points, if not the most central one, deals with the degree to which NIE can or ought to be thought of, in Moynihan's terms, as "modeled shamelessly on the National Institutes of Health" (*7*). Recall again the descriptive differences between educational research (and in fact all behavioral and social science research) and other kinds of research, say, in physics, natural science, or biomedicine. Educational research is interwoven with issues of choice and value. Any agency responsible for administering such research must, first of all, build the political decision structures which will constitute the necessary enabling condition for success (*8*). I am not suggesting that the proposed Institute cannot meet this requirement, but it must if it is to succeed.

The policy framework suggests that care must be exercised in establishing

the Institute so that linear models of research and development (with their hierarchical flavor stemming from the implied primacy of the importance of research) are not adopted to the exclusion of others. Such models carry obvious logical power. They are the ones most commonly used to describe how science contributes to technological and economic advance.

But for reasons associated with the peculiar characteristics of behavioral and social science research, I suspect that other models—for example, those emphasizing practitioner initiative and involvement—may well be far more important for understanding the role of science in fostering educational improvement. We speak, for example, of "an idea whose time has come." In social fields the "whose time has come" part of the phrase is far more important than the "idea." The conditions that create a readiness in a social field to accept an idea from science are more important as far as adoption is concerned than the idea itself. Hence we find a peculiar dual phenomenon in all social fields. On the one hand, we observe the nonadoption of strong ideas in the absence of readiness. On the other, we see faddism, which is nothing more than readiness to adopt, in the absence of knowledge, a readiness which is soon disappointed by the low power of the innovation. If education is to be improved by science, the conditions causing practitioners and policy makers to pay attention to the ideas emerging from science must be established parallel to and as part of the support of science itself.

Extending the argument a little further, then, it may well be that the type of research which most needs stimulation, development, and support is the kind of inquiry that must be conducted in the operating educational institution. This is the research that determines who the learners are (in all their richness and detail), what the schools' operations actually are, and what effect those operations have relative to intended accomplishments. In a word, operations research may be more important. The question then becomes how the Institute can foster this kind of research.

Summary

A policy framework for analyzing educational research and development has been proposed. The framework consists of five primary elements focusing on the contexts in which educational R & D operates, its goals, its characteristics, its manpower, and its decision structures. These five primary elements interact to produce two secondary elements concerned with priorities and objectives, and strategies and tactics. The framework was applied to three current policy proposals in educational R & D including directed R & D programming in the U.S. Office of Education, the request for funds for experimental schools, and the proposed National Institute of Education. Rigorous application of the framework to major policy questions such as these three can help us examine issues before they arise. It can help prevent errors. Its application can provide greater assurance that primary, secondary, and tertiary consequences—those that arise from the interaction of the consequences we most directly perceive—will receive examination. This kind of consideration can help produce the desirable and intended effects and avoid the detrimental consequences of unanticipated impacts in unintended areas.

References and Notes

1. The status study prepared in connection with this review is now available [*Educational Research and Development in the United States, OE-12049* (Government Printing Office, Washington, D.C., 1970)]. Chapter 10 of the report presents a detailed summary of all but the most recent of these reviews. For a brief summary of the OECD policy review, see H. Gideonse, *Educ. Res.* **21**, 5 (April 1970). Later in the year OECD will publish in one volume the status study, the report of the four examiners who were responsible for conducting the review, and a summary of the confrontation session between the examiners and an American team held 19–20 November 1969.
2. When I drafted this article on April 1970, I referred to the possible application of this framework to other behavioral and social science research programs. Since then I have had two opportunities to confront the possibility that research programs directed to social services other than education (such as welfare, corrections, and housing) might also profit by using the framework. It probably is applicable, but I am not professionally familiar enough with these other areas to adduce the evidence. In the event that study should document the usefulness of this framework, it might be possible with appropriate content modifications and additions to see it as a framework for policy formulation in any mission-oriented behavioral and social science research program.
3. "American Education: Notes Toward a New History," AERA-Phi Delta Kappa Address, American Educational Research Association Annual Meeting at Minneapolis, Minnesota, 4 March 1970.
4. I have discussed these matters in chapter 6, *Educational Research and Development in the United States* (*1*).
5. Compare R. J. Schaefer, *The School as a Center of Inquiry* (Harper & Row, New York, 1967).
6. A number of examples of this approach were presented by John Mays of the Office of Science and Technology at the Annual Meeting of AERA in Minneapolis, 5 March 1970.
7. White House press conference, 3 March 1970, mimeographed, p. 1.
8. Borrowing an idea from Theodore Levitt, another way of saying the same thing is that the Institute must link itself closely to its several markets and not fall into the error of thinking, because it has command of such good science, that of course it has something to offer (sell) to education.
9. I thank Maurice Kogan, of the team of OECD examiners, for his help in the development of the framework presented here. This paper was written in the author's private capacity with no official support or endorsement by the U.S. Office of Education.