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AUTHOR Nicodemus, R. B.
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ABSTRACT

This paper is mainly devoted to the analysis of four planning reports that were produced by the Planning Unit of the National Institute of Education (NIE) to guide NIE's activities for 1972-73. Each report presented recommendations for new programs and management activities intended to lead to better achievement of American educational goals. In his discussion, the author focuses primarily on NIE's strategies for obtaining information on which to base decisions about national programs, the attention devoted by NIE to the problems of dissemination and adoption of innovations resulting from national programs, and evidence for the influence of the four planning reports on subsequent NIE programs. The four reports include "Research and Development in Education: Analysis and Program Development," which was prepared by a study group chaired by Senta Raizen; "A Research and Development Agenda for the National Institute of Education," which was prepared by a study group chaired by Beverly Kooi; "The National Institute of Education: Working Papers on Problems, Goals, and Program Initiatives for NIE," which was prepared by the Stanford Research Institute; and "An NIE Strategy Paper," which was prepared by Amitai Etzioni. (JG)

DEVELOPMENT AND DISSEMINATION OF INNOVATION IN EDUCATION

An analysis of eight documents produced for or by the National Institute of Education

Dr. R. B. Nicodemus
The Open University
Milton Keynes MK7 6AA
England

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Introduction

In the first year of the NIE Planning Unit's existence (1971), four planning reports were produced to help guide NIE development specifically for 1972-73. Each report produced recommendations for new programs and management activities which would lead to better achievement of goals in American education. In addition, budget recommendations identified the amount and relative proportion of financial resources which should be allotted to the new programs.

This national activity is of considerable interest to other countries which may be planning or involved in reorganization of education for better application of research to the solution of problems in education.

In this paper, the goals of education listed in the NIE planning reports will not be considered in detail. At their most general level it is difficult to disagree with educational goals which are both idealistic and non-specific i.e. implications for action are not obvious. At a more specific level, the goals have pupils are very relative to particular situations - pupils, school, country or academic discipline.

What may be more useful for persons outside the American system is to consider the following questions:

1- What strategies were utilized by NIE for obtaining the information on which to base decisions about national programs?

2- What importance is given to the problems of dissemination and adoption of the innovations resulting from national programs?

3- What evidence is there for the influence of the four planning reports on subsequent programs in NIE?

In the discussion of the four planning reports, attention is also given to two problems which limit understanding for people within as well as outside the American system. The first is unstated assumptions which underly analysis or expectations of American education. Second is the problem of language or jargon in education which, when combined with inadequate styles of writing, create a considerable problem for translation into the languages of other countries. For example, these two problems converge when we attempt to deal with abstract concepts such as innovation. What is meant by being innovative? Is innovativeness assumed to be desirable? Can innovation be managed or incorporated into institutions? Questions of form, meaning, process and values, when obscured, inevitably limit the clarity of discussion.

Sources of information for the reports

The four planning reports published for limited distribution in 1972 were to provide a rationale for the NIE 1973 R & D* agenda. In particular the reports were -

1- to determine what the most important current problems are

2- to predict what problems are likely to emerge in the next 5-10 years

3- to identify a strategy for solving the problems.

A review of the four reports[1] showed close agreement on the central goals of education although different terminology was used, e.g. "learner goals", "end goals", "output goals". Most of the ideas were repeated in all the reports such as concern for "real life experiences to decrease the separation of students from society". The amount of space given to problems of dissemination varied greatly between the reports.

All four reports drew upon a series of planning documents and conferences as well as a review of literature and congressional hearings. The report chaired by Senta Raizen[2] has an extensive literature review and comprehensive analysis of American education. Of particular interest for readers outside the American system is section II on the "Domain of Education in the United States" which summarizes the variety of influences on policy making.

The report chaired by Beverly Kooi[3] lists eleven special interest meetings and eleven contracted reports which were evidently major sources. The particular value of this report is the description of proposed and existing innovatory programs. The Stanford report[4] is composed of three separate papers the first of which appears in congressional hearings in January 1971. Conferences within the Stanford Research Institute and a literature review are major sources for the report. The fourth and most compact report is the product of one author[5]. This contains the most thoughtful comments on dissemination. The analytical qualities of this report are its most characteristic feature.

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1. "Program Planning for the National Institute of Education: A Summary of Four R & D Analyses". Report P101, NIE Planning Unit (Washington D.C. June 1972)
2. "Research and Development in Education: Analysis and Program Development". Report P102 NIE Planning Unit. (Washington D.C. 1972)
3. "A Research and Development Agenda for the National Institute of Education". Report P103 NIE Planning Unit. (Washington D.C. July 1972)
4. "The National Institute of Education: Working Papers on Problems, Goals, and Program Initiatives for NIE". Research Note 16. Educational Policy Research Center, Stanford Research Institute (Menlo Park, California, June 1972)
5. Etzioni, A. "An NIE Strategy Paper". Report P105 NIE Planning Unit (Washington D.C. July 1972)

*R & D Research and Development

The use of regional and discipline based conferences continues to be a major source for NIE information on which to base policy decision. Stivers[1] mentions a series of "invitational conferences" to outline areas NIE is likely to focus on as well as three additional inputs -

1- analysis of results of disciplinary research

2- knowledge of policy issues facing administrative decision makers at the Federal level

3- knowledge of governmental (political) decision making.

This gives a broad input from local to national levels, published and current research. Stivers mentions that NIE publicizes research priorities to the field prior to funding. Although this is a necessary guide for research proposals it creates some distortion of a central office estimate local demands on the basis of projects proposed.

1. Stivers, P.E. "Researchers at NIE: From Planning into Action" Educational Researcher, 3:5 May, 1974, pp 12-14.

The Raizen Report

The first and largest of the four reports, produced by a committee chaired by a member of the NIE planning unit, provides a broad analysis of goals related to issues in American society. This is based on an extensive review of literature and backed up by considerable statistics.

In the section reviewing problems in education, some difficulty may be encountered by people outside the American system in understanding the "evidence of failure". This will be discussed below in some of the examples presented by the report.

1. The difficulty of finding evidence of curriculum reform in schools is cited as evidence of failure of dissemination. The criteria of success tend to be total adoption of a new curriculum project. This would be rejected, for example, in England where influences of innovation are assumed to be far more subtle and pervasive in a system.

2. "Schools not offering subjects of major importance" is stated to be academic failure. For example, 60% of American high schools do not offer an economics course. This will surprise some European readers, whether or not they come from a comprehensive system. In England schools would not automatically assume that it is even desirable to offer all subjects of "major importance". Integrated subjects are tending to become more important.

3. The poor performance of minority students in achievement scores is presented as another evidence for failure. Countries with a system of external public examinations based on programs of study are less susceptible to this criticism compared to the dominance of "intelligence" tests in the USA. More recently, of course, the relevance of such tests for all groups is being questioned.

4. The drop-out rate is attributed to the failure of schools to prepare pupils to perform at expected academic levels. Beneath this evidence is the American assumption, based partially on a faith in technological efficiency, that everyone should be enabled to pass. In contrast to European systems, Americans do not perceive education as a selective system. In England, the drop-out group would be expected to have achieved a goal such as finding out how relevant an academic education was for their abilities or interests. Failure outside the USA may carry less of a value judgement.

5. High public interest in innovation is supposed to indicate the degree of dissatisfaction with schools - particularly for social and individua development. In contrast, a lower public interest in innovation in other countries is less likely to represent satisfaction than a more conservative expectation of schools and higher social or professional status of teachers. The same comments may be made about alternative schools.

The examples above suggest some of the hazards involved in making cross cultural comparisons. A more complete analysis would have to consider conflicts of ideology such as the needs of society and interests of the individual, egalitarianism and quality in education as they revolve around economic, political or religious issues. The ideal of "freedom" is an important value in American society compared with values of order.

Thus the American concern for equality of opportunity for all groups and freedom of choice for the individual will be presented in a political rhetoric less relevant to other societies.

Attention to development and dissemination of innovation is often imbedded in recommendations for improving the quality of education. Some of the recommendations are quite familiar in dealing with problems of obsolescent or inappropriate content, abstract knowledge, passive learning and lack of diversity. Meeting these problems is what much of the curriculum reform movement of fifteen years ago was about. More contemporary issues reviewed in the report (e.g. separate youth culture and the hidden curriculum) point to more novel forms of innovation. Dissemination is dealt with indirectly in some proposals such as -

1- teacher centres modelled on the British system

2- better utilization of non-school resources such as television.

The Kooi Report

Although the second report was produced by a committee chaired by a member of the NIE planning unit, the result is an example of assigning tasks which are either unclear or beyond the experience and competence of a group. The report reveals an uncritical application of concepts such as 'taxonomies of objectives' and 'hierarchies' to create meaningless matrices. For example, the old trilogy of cognitive, physical and social-emotional development are matched as goals against programs such as career education and learner controlled education. Dissemination activities of 'informing', 'demonstrating' and 'building acceptance' are defined in a 'hierarchial relationship' which goes from one extreme of objective neutrality to one of subjective commitment.

It is possible to guess what the authors mean by such classification and predict what consequences derive from the exercise. But it introduces unnecessary and unproductive complexity into reading. For translators the exercise will not be appreciated.

In addressing the question of how to make dissemination work, the report calls attention to the following:

1- Educational needs and marketing possibilities should be analyzed prior to development of new programs.

2- Dissemination strategies will need to be adjusted to the user and product. Contact with all dissemination agents should be made early in the program planning.

3- Financial commitment should be secured from other agencies who may support the dissemination effort.

4- NIE should conduct research on communication, decision-making and innovation in education.

Influencing changes in personnel selection and training is seen as a major "enabling" goal of NIE since the personnel involved in education will influence the "ability of the Institute to reach learner and system

goals" (p.20). In developing this idea, the report continues to indulge in overstatement of the obvious as well as political naivety, eg -

1- personnel plans will have to take into account the fact that "new roles may emerge while old roles decline in importance or are significantly modified".

2- Selection will become more important with the oversupply of teachers.

3- Personnel must be trained for the future rather than the present.

4- Schools, government, industry and community groups should take over some responsibility for developing educational personnel from universities.

5- NIE should be concerned in the selection of personnel.

To correct past neglect of the 'development' part of R & D, researchers should be drawn from a wider variety of disciplines such as anthropology, sociology, economics and political science. This recommendation ignores the active participation of other disciplines in education and the growing preference for employing researchers trained in a discipline other than education.

Outside of the report's useful commentary on existing programs, it reflects how a committee can be overwhelmed by detail and fail to achieve a current, comprehensive grasp in depth of the problem of diffusion and adoption of innovation in education.

The Stanford Report

Why has Federally sponsored R & D in education not contributed more effectively to the solution of problems in education? Low level of financial support is always given as a limitation, however causal analysis of the failure is more directly related to three areas -

1- the form of the products of R & D.

2- the academic emphasis of R & D.

3- the management of R & D.

All three areas may be seen as different aspects of a centralized "market mechanism" which is insufficiently responsive to users of educational innovation. The solution to this situation is partially seen as one of decentralization in which users would have more influence on the form of the innovation. This is seen as more consistent with the ideals of American democracy in which a "participative 'pull' strategy... would foster incentive to innovate at local levels". The language in which this is expressed would often challenge the skill of anyone attempting to translate into plain English or a foreign language. Part of the problem of understanding derives from the use of language from other specialized fields.[1]

1. For example 'that a centralized Federally conducted marketing system will inevitably become politically captive in ways that do not reflec the pluralistic model of political participation on which the nation is based (i.e. that the best interests of "have not" groups, who currently comprise a priority constituency in education will not be served).' p III-24.

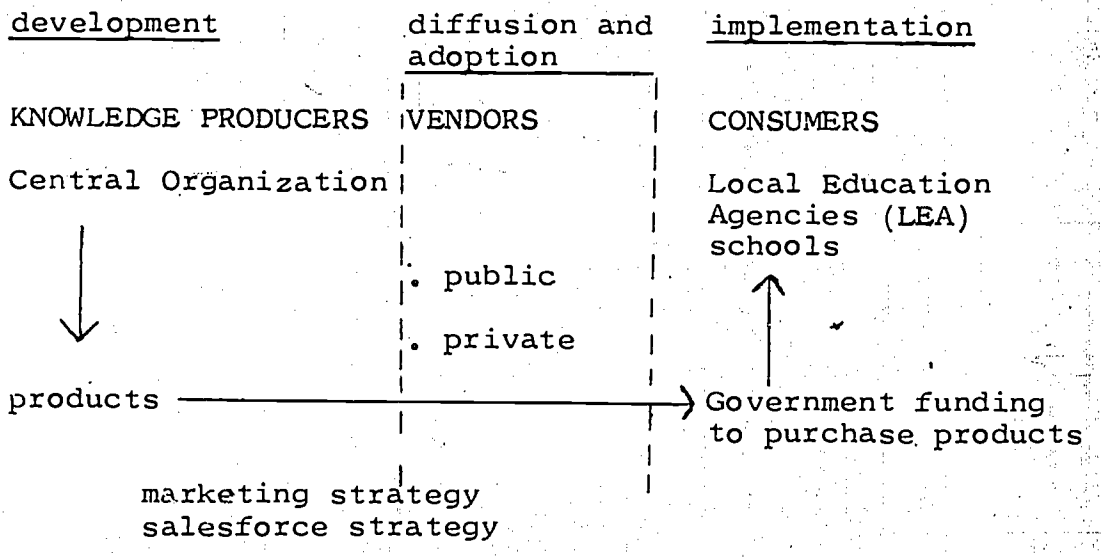
There are a number of assumptions in the previous paragraph regarding innovation:

1- that the level of innovation needs to be higher

2- that there is an inadequate demand for innovation at the local level.

The analysis of R & D and its utilization may be outlined in the following figure which also introduces some of the specialized terminology.

Figure 1:Market Mechanism:



This simplified scheme represents the one-way "linear" model in which consumers have little control over development and diffusion. Why the model does not work is partially explained by an expansion of the three areas previously mentioned.

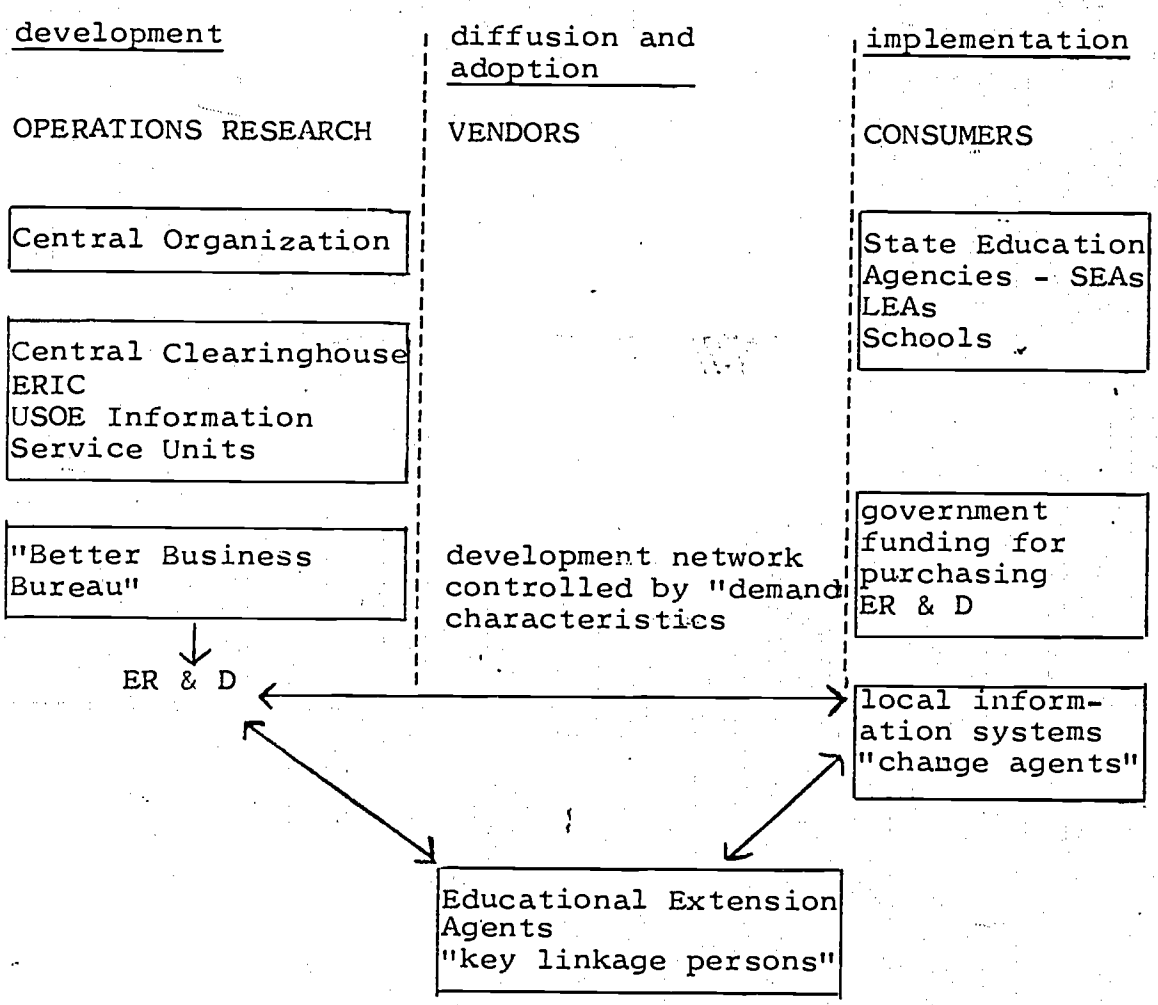
1. Problems facing schools require more emphasis on providing R & D services rather than pre-packaged products which have had to predict needs at the local level.

2. Academic solutions have tended to be fragmented into disciplines (rather than integrated in a "problems orientated" approach) which have ignored the political aspects and are addressed to colleagues outside the consumer level. The specialist terminology also hardens the barrier between, for example, teachers ("performers") and researchers.

3. The management of "knowledge production" excludes potential users in decisions and is insufficiently long-range to include all stages of dissemination and implementation. Restated in the specialized jargon - the "rise time" from initiation to adoption is longer than the "planning horizon" of the "ER & D policy making process".

The decentralized Market Mechanism proposed to correct these difficulties introduces a new set of terms which may be compared in the first two figures. In figure 2 there is a two-way flow of information and a greater number of paths employed. The inter-face between development and implementation is broadened to include a wider variety of people or institutions. Although the terminology is partially inspired by "problem solving" and "linkage models" of RD & D, the figure does not attempt to incorporate analysis of paths found in these models.

Figure 2:Decentralized'Market Mechanism" (simplified outline)



One outcome of this decentralized market mechanism will be the development of innovations, in response to local demand, which are more adaptive to the solution of local problems. Some examples given in the report (III 25) are new school/classroom management systems such as:-

- 1- team teaching,
  2- open classroom,
  3- individually prescribed instruction - IPI,
  4- Skinnerian positive reinforcement and token economies

- Or feasible curr ular systems which utilize highly cost-effective educational technologies combining computer assisted, pre-programmed and video-taped instruction.

Private rather than public vendors are recommended because of the latter's supposed political neutrality. The building of a local support system "will ensure adoption of the new and its integration with the old" (III 24). This analysis confronts us with one of the more obvious contradictions in the paper wherein an innovation is visualized as ideally developing at the local level and is simultaneously seen as an import from outside. Beneath this analysis is the hidden assumption of a more knowledgeable "central organization" which will wisely guide the SEAs and LEAs on a "proper" path of innovation. The assumptions underlying these attitudes are more clearly revealed in the following section of the report which identifies defects at the local and individual teacher level as responsible for low levels of innovation. The recommended corrections emphasize, as we would expect, change agents training for administrators.

Problem of community support

It is recognized that the majority of the public gives little support to innovation in schools. Concern about the cost of education, (reflected in local property taxes) and problems of pupil discipline lead the public to favour traditional programs operated as economically as possible. Against this background are the obvious pockets of activity often associated at extreme ends of the socio-economic scale - ie either poor or rich. Given this predominantly conservative background the report concludes that there is a need to "increase the local incentive to innovate."

Personality and social status

Drawing upon very ambiguous research results, the report states that "Public elementary schools do not tend to attract the kinds of persons who are constitutionally not able to engage in innovative educational renewal. Teachers need highly structured and authoritarian situations. Also since "teaching in 'difficult' schools does not enjoy him social status" bright and able teachers go to more congenial schools.

Although it is rather astounding to find such a superficial generalization about any group in a public document, the analysis points to assumptions which are based on ideal types: The extreme statements which such "ideal" analysis leads to are in part responsible for the unresolvable contradictions found in this document. The non-innovative person is presented as having the following characteristics:

1- need for highly structured authoritarian situations.

2- prefers unambiguous environment.

3- reacts to stress in non-rational emotional ways.

4- non-flexible, concrete orientated.

It is curious that the demand for flexibility is placed on the individual rather than the institution. This, however, is a familiar administrative view which would prefer to deal with a homogeneous situation of ideal types rather than a collection of individuals - some of which may work more effectively in more didactic or authoritarian modes. Such generalizations as above also fail to recognize the influence of the particular community or the discipline which will certainly call for different nixes of "ideal" types.

This analysis of innovation and innovative types is typically American in contrast to the British situation which implicitly assumes that the diversity of individuals in a situation is not only natural but desirable. The differences this creates in the analysis of innovation on two sides of the Atlantic ocean is certainly worthy of a separate paper.

Three programs are suggested to deal with the three problems of community, personality and social status

1. Change-agent Training. Funds for training should be co-ordinated with other formal programs of educational renewal so that key people, (eg the school principal and "head teacher") will have resources to implement the innovation. The principal, in particular, is seen as important in "selling" an innovation to the community and in guiding teachers "through the anxiety-provoking ambiguities of change" (III 28).

2. Social Marketing Approaches. This is seen as a more forceful means of dissemination which could use advertising and marketing techniques through the mass media. This, however, highlights the political nature of R & D, and raises strong moral questions. Particular areas in which community awareness could be raised are:

(a) importance of education for opportunities in a changing society.

(b) importance of teachers in problem schools.

(c) new educational practices found "effective".

(d) the "desirability" of having the local schools "keep up" (III 31).

3. Voluntary Sector Approach. Voluntary organizations must be involved in any effective program of local educational renewal. Organizations could be used:

(a) in a policy advisory capacity.

(b) to organise a 'conclusion-orientated conference'.

(c) in educational assessment and renewal activities.

The Etzioni Report

In contrast to the three previous planning reports, the fourth and last is the product of one author, Amitai Etzioni, professor of sociology at Columbia University.

Schemes for dissemination are very much a part of most programs Etzioni recommends for NIE. In addition he recommends three programs specifically "to Enhance Legitimation" of innovation in education. All three are built upon a "direct bridge between NIE, the fifty states, thousands of school systems, and other key educational institutions..."(page 30)

This recommendation is quite in contrast to the other three reports which depend more on the creation of intermediate links outside NIE. The basis rests in Etzioni view of American education as not decentralized but fragmented or "feudalised". There is a considerable degree of local autonomy in LEAs which is outside the influence of any central authority - whether at the Federal or State level of Government. Etzioni also points out that the federal contribution to education is not only small (15% of the total expenditure) but is usually dispensed unconditionally. Thus, he concludes that "an effective NIE program must largely assume reliance on other means than financial pressure or reward."(page 27). Change can only be accomplished by persuasion, emulation, dissemination of knowledge and collaboration with local groups. In particular he recommends the following three programs:

1. An NIE advisory board with representatives from each of the fifty states and from select LEAs. The board could meet four times a year to be briefed about NIE activities and to suggest areas of future NIE activity.

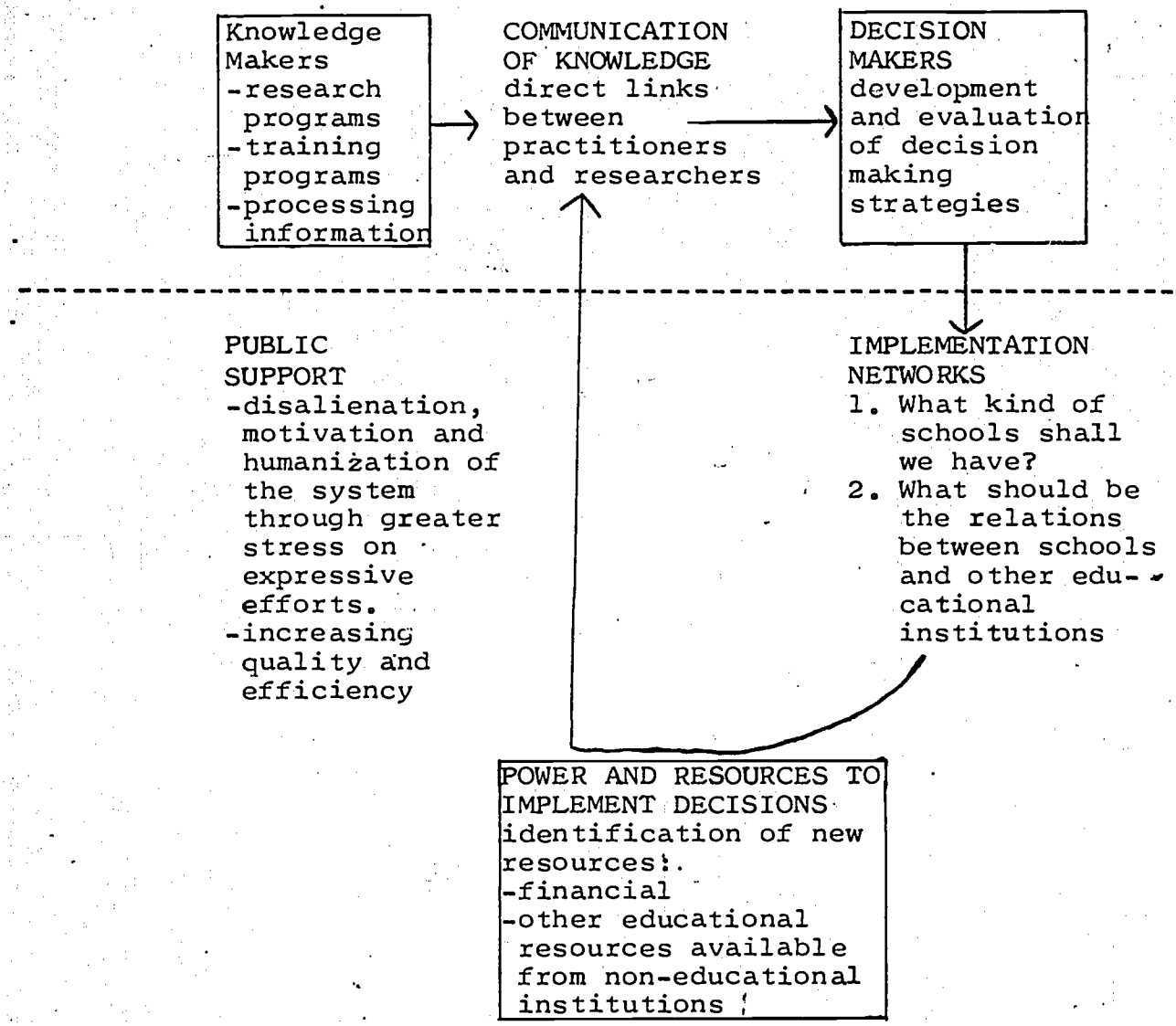
2. Regular regional conferences for administrators with functions similar to 1. above.

3. Training center for local administrators for communicating new developments and needs of LEAs. The center could also participate with colleges in the training of new administrators.

These three recommendations differ from those in the previous reports in at least two ways; first, they are quite specific to particular activities rather than requiring broad policy decisions; second, they propose a direct link between NIE and the local levels of education. The language used is also notably different in that it is expressed in plain, direct and clear English, ie one word is used throughout in preference to many, the use of words from other disciplines is avoided.

In the third and final section of his report, Etzioni summarizes the barriers to a greater realization of goals, recommends how to remove the barriers and presents a theoretical model (derived from cybernetic theory) which helps to classify the programs which he presents in Section II. The first six program areas all fit under the "knowledge maker" part of the model summarized in the figure below. (This is a modification of Etzioni's model.) The programs are in the realm of basic and applied research, development and demonstration. "Communication of knowledge" includes a program area discussed above as "enhancing legitimation."

Figure 3:Outline of system to implement change (derived from Etzioni



A summary of Etzioni's preliminary analysis of some barriers in this system is given below.

1. Duplication of research results and mistakes from the lack of a centralized approach and leadership from professional organizations.

2. Research findings poorly reported and disseminated.

3. Decision making at the local level which is largely incremental - lacking a long term comprehensive design and dealing with trivial issues, at the opposite extreme is what may be described as "futurology" or attempting to deal with utopian plans for the year 2000. Undirected change is the most common typology and needs to be replaced by a "carefully planned, calculated and systematic procedure" to innovation. (page 34).

4. The lack of critical educational research networks with the result that the guidance is utopian, political or simply wrong.

5. Great discrepancies between goals and the resources and

power to implement goals.

6. Lack of public consensus over goals and means to implement them.

Influence of planning reports

Identification of the possible influence of the four planning reports on subsequent NIE dissemination activity and policy is subject to at least three limitations:

1. Much of the literature which would reveal this relationship is internal to NIE and not generally available. Indeed, an up-to-date view would mainly be available through personal contact with NIE staff.

2. Some dissemination activities which NIE may have taken (and as suggested by the reports) were already funded by the Office of Education either in an outside grant or as an established activity within a government agency. It is difficult to unravel history from imagination in official committee reports which often do not refer to their sources.

3. Information on current research projects supported by NIE are difficult, if not impossible, to obtain without a personal visit to the project. Evidence on projects selected for support would imply what dissemination activities would be approved of by NIE, at least in an investigative situation.

Government funding of research projects is increasingly directed toward non-profit organizations or regional educational laboratories rather than universities. For example, the Academy for Educational Development (Washington,DC) conducts research, provides consultants and publications in a wide variety of problem areas in education. An average of 44% of its grants come from the federal government. According to the academy's vice-president, Sidney Tickton[1], "Research findings are put into practice by teachers through their efforts to up-grade their educational offerings. Some of this occurs through in-service workshops and seminars; some of this involves extension activities of universities and colleges, and some results from new concepts arising from R & D activities which are brought into the classroom as part of the education of teachers. The process is relatively slow, as you know, and is certainly imperfect."

At the same time that the NIE planning reports were being published a research project on a State dissemination program was completed and the results published[2]. This massive study used a system of field agents working directly with schools in ways which would seem to be recommended by the NIE planning reports.

Unfortunately, there is no overall guide to the relative research activities of non-profit organizations, educational laboratories, universities and other various groups involved. On specific research topics, annual reviews of research, annotated bibliographies and other reviews will identify important

1. personal letter September, 1974

2. Sieber, Sam D.; Louis, K.S.; Metzger, L.; The Use of Educational Knowledge. Two volumes. Bureau of Applied Social Research, Columbia University, September 1972.

activities and over-views of problems. For example, Clifford observes that deliberate dissemination activities "were far inferior in operation to the process of cultural diffusion, to that obscure, ambiguous, often involuntary transaction system whereby innovations and ideas are spread widely throughout some extended sub-society or the whole culture."[1] Although the implementation of innovation is a fundamental concern of laboratories, at least two concentrate on particular aspects of dissemination - eg a communication program to improve "national adoption" and an administering for change program.[2]

The National Center for Educational Statistics is one of the most potent government offices for dissemination. It not only collects statistics but pursues an active policy of disseminating new developments as well as standard statistics. Two development projects are of particular interest - the longitudinal Study of Educational Effects and Educational Indicators that measure Social and Program Progress.[3]

Of the five major research areas supported by NIE in the fiscal year 1974 (July 1973-June 1974) one concerned the "production and utilization of knowledge."[4] Eleven projects represented a wide variety of disciplines and approaches to the problem of dissemination.

Three widely distributed reports from NIE were also consulted for evidence on dissemination policy. A brief report published six months after the four planning reports gives an historical sketch of NIE and outline of research activities. Under the topic of "dissemination of research and development findings" are preliminary thoughts on changes NIE might make in the ERIC system but no indication of the relationship between NIE and the Office of Education in this area.[5] A document produced a year later by the NIE Office of Public Information summarizes the first 1½ years of NIE's official existence, describes its evolving administrative structure and outlines the research support program.[6] Of the total 74 budget of $75,700 million, 9.6% is directed to dissemination activities. These activities include:

1. Page 25 Geraldine J. Clifford "A History of the Impact of the Research on Teaching" Second Handbook of Research on Teaching. R.M.W. Travers ed. (Chicago: Rand McNally, 1973).

2. Educational R & D Programs Conducted by Laboratories and Centers. National Center for Educational Research and Development, Office of Education (Washington, DC July, 1971).

3. Projects, Products, and Services of the National Center for Educational Statistics. U.S. Dept. of Health, Education and Welfare. (Washington DC, 1972).

4. No grants were made in the fiscal year 1975 - personal letter of 21st October, 1974 from NIE.

5. The National Institute of Education. A Brief Outline of Its History, Status, and Tentative Plans. U.S. Dept. of Health, Education, and Welfare (Washington DC, February 23rd, 1973).

6. NIE: Its History and Programs. Office of Information, Feb. 28th, 1974.

1- Improve operation of the ERIC system.

2- Support seven states in Appalachia in work with local schools to provide more effective research development products.

3- Continue technical assistance to State Education Agencies.

4- Consumer information program on innovations in education including a Product Catalogue.

5- Preparation of a Fact Book on educational R & D and series of Policy Papers on the current state of knowledge about major issues.

6- Preliminary planning for State Education Agency dissemination.

7- Planning and conduct of dissemination strategies for products developed under NIE support.

8- Survey of educational problems and needs.

The third document[1] is a substantial analysis of R & D within the American educational system. It gives a unique and easily comprehended account in depth backed up by considerable attention to models.

In their review of the R & D system the authors observe that a new system of institutions have been created external to traditional ones (schools, LEAs, SEAs,) which are not enclosed in:

1. "any well tested scholarly understanding of a domain of practice" or

2. "in any intimate knowledge of operational problems." (Page 2).

Consequently, a revised concept of the R & D system is needed which included attention to:

1. how problems are formulated.

2. what likely resources may solve the problems.

3. the organization of systems related to implementation.

Further, Government policy toward education R & D had led to:

1. emphasis of quick pay-off activities for political reasons rather than long-range research which might realistically deal with the complexities.

2. lack of quality and variety of disciplines in research groups.

3. haphazard linkage relationships between institutions.

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Two types of linking activity are identified; one emphasizing a delivery strategy to relate research to the community; the other providing for inter-action between researcher and practitioner. The second assumes the school's capacity to identify and suggest solutions to problems. In other words, they are innovative. The report does give a very realistic assessment of the limits to incentives for innovation.

Among the criticisms of the "linear" model for R & D are three of particular importance:

1. Researcher's have tended to view innovative practice as a simple linkage of external (to the school) research and development.

2. There is an assumption that products of R & D maintain their identity in adoption and implementation.

3. There is a belief in a "one-to-one correspondence between institutions and functions, - ie that universities do research, non-profit and profit organizations do development, and that schools utilize..."(page 53).

The proposal for an inter-active model of educational change introduces a number of useful concepts:

1. Research should be regarded as a legitimate activity of SEAs and LEAs.

2. Internal linkage (within SEA or LEA) is part of "a more comprehensive process of internal problem solving."

3. External R & D should be a "source of alternative goals, description of problems, and options for dealing with them."

The final chapters expands on recommendations which could be applied with little modification to any system of education.

With the production of this report one year ago, NIE was in a far stronger position than at the time of the 1972 planning reports to influence fundamental changes in American education, the quality and efficiency of knowledge production and utilization. To outside observers the effects of the drastic budget cuts for 1975 on this effort are still not evident.

Summary

1. The close agreement on goals in the four NIE Planning Reports reflect the "universal" meanings such general statements have within an entire country. A close agreement would also be found between most countries in the Western world.

2. Different sources used to identify the goals have little effect upon their content.

3. Specific proposals for innovatory programs, especially the terminology and style used, are dramatically influenced by the groups developing the proposals. Special words and styles act as a barrier between many groups.

4. NIE uses a wide variety of sources, from local to the national level, to determine program needs and their likely support.

5. Assumptions behind many American innovatory programs would not be shared by European colleagues. Thus, many programs would not be relevant in a cross-cultural situation even though they may appear "desirable".

6. The emphasis of innovatory programs is shifting towards ones which a) provide services rather than pre-packaged products, b) consider political implications as well as academic criteria, c) are planned for a longer time period to include of stages of the innovatory proces.

7. Dissemination activities are involving a greater variety of people and institutions between stages of development and implementation with an emphasis on the two-way flow of information.

8. Although the influence of local levels of education is supposed to increase, national level planning appear to remain far more important in influencing the development of an innovation. Failure of implementation is often inappropriately assigned to the local level.

9. The desirable aspects of resistance to innovation are not recognized in most educational literature.

10. Innovation is assumed to be equivalent to flexibility. The need for institutions to be flexible is not emphasize compared to the demand for individuals to exhibit flexibility.

11. Increasingly funding of innovative activities based in large specialist organization is directed toward profit and non-profit organizations rather than universities.

12. Lack of a scholarly treatment over too short a time span with inadequate linkage between institution has resulted in less than optimum application of R & D results to problems in education.

13. Products of R & D lose their identity in adoption and implementation in schools.

14. A comprehensive process of problem solving actively involving all levels of research and education should result in the development of more adaptable and effective R & D products.