DOCUMENT RESUME

ED 135 913 UD 016 787

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TITLE The Federal Role in Educational R & D.
PUB DATE 76
NOTE 12p.; Paper presented at the National Conference on Urban Education (2nd, Milwaukee, Wisconsin).

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Administrative Agencies; Educational Legislation; *Educational Research; Educational Resources; Federal Aid; *Federal Government; Federal Legislation; *Government Role; Research and Development Centers; *Research Needs; *Research Utilization; Resource Allocations
IDENTIFIERS *National Institute of Education

ABSTRACT

The federal mission in educational research from 1868, when the Department of Education was established, to 1954, was to collect statistics. In 1954 the Cooperative Research Act authorized the Commissioner of Education to finance research and demonstrations in education. Outside the Office of Education (OE), the National Science Foundation provided most of the funds in the development of new curricula in science and mathematics. OE extended its research program to include the development portion of educational R and D. In 1963 it established nine federally funded, university based R and D centers and several other regional laboratories. A major breakthrough for educational research and development came in 1965 with the passage of the Elementary and Secondary Education Act. The 1960s saw a network of new research agencies formed with OE under the Bureau of Research. The National Institute for Education (NIE) was established in 1972 as the major federal educational research agency. While the NIE was established with considerable support from the educational research community, it has had many problems since its inception. The federal role in educational research is more comprehensive, vigorous and supportive than in any other previous era. While federal funding for educational research and development has dramatically, increased, decision-makers have not been convinced that educational research has real value or that it will improve schooling. As a result, educational research efforts for 1976-77 received 2.6 per cent of the federal educational budget while 10 per cent of the defense budget goes to research and the agricultural and health fields spend about 5 per cent of their budgets on research. (Author/JM)

# THE FEDERAL ROLE IN EDUCATIONAL R & D**

Allan C. Ornstein

Prior to the mid 1960s, it was fashionable among educators and researchers to bemoan the low level of coordination and development in the educational research community. In the last decade, a great many organizational and supportive changes have been made, spearheaded by HEW and OE.

The federal role in educational research from 1867, when the Department of Education was established, to 1954 was largely one in which the Department (later changed to OE) was charged with the responsibility of collecting statistics on the condition and progress of education at the local, state, and federal levels. This was merely a social bookkeeping function and led to the establishment of the statistics unit in OE. During these years, the Office of Education conducted surveys and disseminated reports to help the states and local school districts deal with a variety of educational problems.[1] During this period, it might be said that OE and the federal government were bystanders as the field of educational research moved through its early emphasis on philosophic inquiry to its predominant concern with psychologically based empiricism and aptitude and intelligence testing.

In 1954 the Cooperative Research Act was passed by Congress which authorized the Commissioner of Education to enter into contracts or jointly finance cooperative arrangements with colleges and universities and state educational agencies to conduct research and demonstrations in the field of education. Although the

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[1]Stephen K. Bailey, "Significance of the Federal Investment in Educational R & D," Journal of Research and Development in Education (Summer 1969), pp. 34-37; Stephen K. Bailey, et al, Schoolmen and politics (Syracuse, N. Y.: Syracuse University Press, 1962).

** This article is based on the author's forthcoming text, Social Perspectives in Education (Itasca, Ill.: Peacock, 1978).

legislation was not considered dramatic in terms of actual funds, Congress recognized the feasibility of improving the educational delivery system through research and the federal government assumed the initiative and cost.[2] Within six years the Cooperative Research Programs had stimulated many discipline-based researchers (outside schools of education) to undertake work on education for the first time. The number of research proposals from professors outside education increased fourfold between 1955 and 1963, while the number from schools of education remained the same. By 1963, the majority of research proposals in education originated with discipline people.[3]

In 1958 the National Defense Education Act (NDEA) was passed, with provisions for the support of research on language, media, and science. Outside OE, the National Science Foundation (NSF) provided most of the funds in research, design, and dissemination of new curricula in science and mathematics. Not to be outdone, OE extended its research program to include the development portion of educational R & D through projects in various subject areas. In 1963, it extended this capacity building in educational research by establishing nine federal-funded, university-based R & D centers and several other regional laboratories.[4]

The next major breakthrough came in 1965, with the passage of the Elementary and Secondary Act (ESEA), in which Titles III and IV broadened the authorization for federal programs in support of educational R & D. Concern for disadvantaged students, demonstrated by ESEA funding, generated a host of compensatory programs as well as research related activities on poverty, deprivation, and minority education. These research activities ranged from direct support of experiments in local school districts, colleges, and universities to training programs for educational researchers in institutions of higher learning. Research funds increased

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[2]David L. Clark, "Federal Policy in Educational Research and Development," Educational Researcher (June 1976), pp. 3-9.

[3]Sam D. Sieber, "Federal Support for Research and Development in Education and its Effects," In C. W. Gordon (ed.), Uses of the Sociology of Education. Seventy-third Yearbook of the National Society for the Study of Education, Part II (Chicago:

from $15.8 million in 1965 to $49.8 million in 1966.[5]

The establishment of Educational Research Information Centers (ERIC) by the Office of Education was another attempt to strengthen educational R& D. Thirteen centers were funded in 1966; the existing number was 16 ten years later. These centers have provided a storage and retrival system for educational information and research; they are helpful to doctoral students and researchers who wish to review the literature or to dissimenate their own research findings to other educators.

With the passage of time, the 1960s saw a network of new research agencies formed within OE under the Bureau of Research; these agencies' functions were related to research concerning language development, media, international educational, foreign currency, professional training, guidance and counseling, handicapped education, vocational and adult education, etc. An increasing amount of funds were placed at the disposal of the Bureau, amounting to nearly $30 million by the end of the decade. With the exception of handicapped ~~research~~ vocational and adult education research, these new agencies were subsequently transferred to the National Institute for Education.

The National Institute for Education (NIE) was established in 1972 under OE and is now an independent agency under HEW; it is considered the major educational

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University of Chicago Press, 1974), pp. 478-502

[4]Clark,"Federal Policy in Educational Research and Development."

[5]Hendrick Gidenonse, Educational Research and Development in the United States (Washington, D. C.: U. S. Government Printing Office, 1970); Sieber, "Federal Support for Research and Development in Education and its Effects."

research agency in the federal government. While the NIE was established with considerable support from the educational research community, the agency has had numerous problems in getting off the ground. Its annual budget has been continuously trimmed by Congress. Behind-the-scene political activity and bureaucratic struggles to separate the agency from OE have plagued the agency. There have been serious communication gaps between NIE leaders and Congress; Congressional dissatisfaction with NIE funding procedures; lack of support for many of their programs and strong criticism of the agency by other educators, including state school officers, teacher groups, and college administrators.[6] At one point in the Senate Appropriations Committee, zero dollars was recommended to NIE for fiscal year 1975 to prove their dissatisfaction with NIE. However, there were written statements of support from several educational associations -- and NIE was funded.[7] Today, the shape and direction of NIE are still in doubt, and there is still controversy over many of their funding procedures and programs.

Nearly all research money in education comes from the federal government. Local educational agencies (LEAs) have been sluggish in setting up viable R & D activities. And, since school districts are state funded, it follows that the state educational agencies (SEAs) are not doing much to promote educational R & D at the local level.[8] Less than 7 percent of the total support for educational R & D come from state and local agencies; these estimates include higher education institutions, academic associations, and teacher organization as well as xxxx state departments of education and local school districts.[9]

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[6] John Brademas, "A Congressional View of Education R & D and NIE," Educational Researcher (November 1972), pp. 12-15; Patricia E. Stivers, "NIE: Learning About Congress the Hard Way," Educational Researcher (November 1973), pp. 8-9; and Arthur E. Wise, "The Taming of the National Institute of Education," Phi Delta Kappan (September 1976), pp. 62-65.

[7] Patricia E. Stivers, "NIE: Another Appropriations Crisis," Educational Researcher (November 1974), pp. 9-15.

Not only do most school people at the state and local levels lack the technical skills to understand, much less conduct research, most research is considered by practitioners to be irrelevant to their daily activities. Moreover, they are reluctant to participate in research, since the results often can be used to make comparisions at the state or local level, or even to compare student groups.[10] Adding to these problems, it is not a simple matter for a state or local educational agency to adopt a new machine or method, regardless of what the research purports about the innovation. Machines cost money; teachers have to be retained; others have to be retrained. Teacher salaries are set years in advance, budgets are tight.[11] There is no profit motive or competition, as in the private sector, to adopt the best or most effective program. In short, there is no incentive to cooperate in research endeavors or to adopt new programs based on research findings. These attitudes of state and local schoolpeople furnish ample justification for the increasing federal involvement in R & D.

In viewing the federal role in this area, it is clear that it is more comprehensive, vigorous, and supportive than any other previous era. Yet there is still considerable doubt and dissatisfaction with the federal investment

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[8]Bailey, "Significance of the Federal Investment in Education R & D."

[9]Digest of Educational Statistics, 1973 (Washington, D.C.: U. S. Government Printing Office, 1974), Table 170, p. 152.

[10]Milbey W. McLaughlin, Evaluation and Reform: The Elementary and Secondary Education Act of 1965/Title I (Cambridge, Mass.: Ballinger, 1975); Allan C. Ornstein, "Bridging the Gap Between Researchers and Practitioners," Illinois Schools Journal (Winter, 1975-76), pp. 35-48.

[11]Claiborne Pell, "Building Partnerships for Educational Research and Development," Educational Researcher (January 1975), pp. 11-12.

held within the executive and legislative branches. While the investment has dramatically increased, decision-makers have not been convinced that the outcome of educational research has real value or that it will improve schooling. Educational R & D has become, in effect, an obligation without an effective constituency; continuing difficulty and underfunding are illustrated by the problems of NIE -- the present umbrella agency for educational research -- the fact that it has lost the confidence of Congress and many educators.

But the problem of educational R & D goes beyond NIE and the federal government; it involves groups and individuals in leadership positions, competition for limited funds, favors and partisan agreements between bureacracts in Washington and state and local school grantsmen and university professors, triviality of much of the research; irrelevance of most research to what goes on in schools, and poor communication between researcher and practitioners.[12]

In summing up the federal role in educational R & D, it is noted that it supports this obligation more than state and local agencies. As of fiscal year 1976, the federal investment in educational R & D (loosely defined to include innovations, diffusion, and evaluation) approached $318 million, twice the amount in 1969 and 26 times the amount in 1963. In the midst of this rapid growth pattern, HEW and OE received $291 million (of which NIE received $80 million) and NSF received $27 million. But, as illustrated in Table 1, federal obligations for all functions and programs totaled $21.6 billion in 1976, with national defense comprising 53 percent. Research for education represented only 1.5 percent. And, although this seems low, it represents the highest

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[12] See Francis C. Caro, "Evaluative Researchers and Practitioners: Conflicts and Accomodation," Journal of Research and Development in Education (Spring 1975), pp. 55-62; David R. Krathwohl, "An Analysis of the Perceived Ineffectiveness of Educational Research and Some Recommendations," Educational Psychologist (No. 2, 1974), pp. 73-86; Carol Weiss (ed.), Evaluating Action Programs (Boston: Allyn & Bacon, 1972).

Table 1

FEDERAL R&D OBLIGATION BY FUNCTION, FISCAL YEARS 1969-76

(Dollars in Millions)

| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 |
|---|---|---|---|---|---|---|---|---|
| Total functions | $15,641.1 | $15,340.3 | $15,564.2 | $16,511.9 | $16,821.2 | $17,438.2 | $18,905.1 | $21,651.9 |
| National Defense | 8,353.7 | 7,976.3 | 8,106.1 | 8,897.7 | 8,997.9 | 9,011.5 | 9,498.5 | 11,358.1 |
| Space | 3,731.7 | 3,509.9 | 2,893.0 | 2,715.6 | 2,608.9 | 2,501.9 | 2,554.0 | 2,897.4 |
| Health | 1,113.0 | 1,112.6 | 1,323.4 | 1,567.1 | 1,596.9 | 2,064.2 | 2,158.7 | 1,904.0 |
| Energy | 327.9 | 317.3 | 323.6 | 382.7 | 441.6 | 570.6 | 933.6 | 1,276.8 |
| Science & Technology | 513.4 | 524.6 | 523.7 | 601.2 | 604.4 | 687.7 | 772.8 | 860.4 |
| Natural Resources | 373.5 | 418.2 | 517.1 | 588.3 | 583.5 | 575.6 | 744.5 | 825.4 |
| Transportation & Communication | 458.1 | 590.2 | 778.7 | 612.8 | 627.1 | 698.8 | 676.0 | 711.9 |
| Education | 154.8 | 146.6 | 186.1 | 190.7 | 214.2 | 173.5 | 157.8 | 318.2 |
| Education R&D Percent of Total Federal R&D | 0.9% | 0.9% | 1.2% | 1.2% | 1.3% | 1.0% | 0.8% | 1.5% |
| Remaining Functions: Social, Economic, Housing, Crime Prevention, etc. | 615.0 | 744 | 910 | 954 | 1,146 | 1,154 | 1,409 | 1,498 |

Source: National Science Foundation, Analysis of Federal R & D Funding by Function (Washington, D. C.:U.S. Government Printing Office, 1976), pp. 66-74.

percentage of total federal R & D compared to previous years. Put in a different perspective, total federal expenditures for public and private education approximated $13.8 billion in school year 1976-77, as shown in Table 2; the total federal investment in educational R & D ($318 million) represented 2.3 percent of the federal commitment to education, and this percent is also the highest it has ever been. If we add another $15 million, the approximate expenditures for educational R & D from state and local school agencies, and another $15 million from foundation sources, to the federal investment, total expenditures for educational R & D, fiscal year 1976, was about $348 million. Compare this sum with total expenditures for education, school year 1976-77, that is $130 billion -- and the percent of the educational budget being allocated for R & D was 2.6 percent.

Considering the size of the field it is supposed to affect, the proportion of research expenditures is severely limited. For some reason, other less "intellectual" enterprises than education treat research more seriously. About 10 percent of the defense budget goes to research; private industry and the agriculture and health fields spend about 5 percent.[13] In short, the current system of producing and consuming educational research does not seem to be well-established.

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[13]Ornstein, "Bridging the Gap Between Researchers and Practitioners"; Edward Wynne, "Educational Research: A Profession in Search of a Constituency," Phi Delta Kappan (December 1970), pp.

Table 2

TOTAL FEDERAL EXPENDITURES

(PUBLIC AND PRIVATE, ALL LEVELS) SCHOOL YEARS 1969-76

(Dollars in Millions)

| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 |
|---|---|---|---|---|---|---|---|---|
| Total federal expenditures in education | 7,400,000 | | 9,400,000 | 9,700,000 | 11,100,000 | 12,100,000 | (13,000,000)[a] | (13,800,000) |
| Federal expenditures for educational R&D (from Table 1) | 154.5 | 146.6 | 186.1 | 190.7 | 214.2 | 173.5 | 157.8 | 318.2 |
| Federal expenditures for educational R&D percent of total expenditures in education | 2.1% | | 1.9% | 2.0% | 1.9% | 1.4% | (1.2%)[a] | (2.3%) |

Source: Projections of Educational Statistics to 1983-84 (Washington, D. C.: U. S. Government Printing Office, 1975), p. 75.

Note: a = estimates