

EFFECTIVENESS OF EDUCATIONAL RESOURCES[†]

Expenditures, Efficiency, and Equity in Education: The Federal Government's Role

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Economists have long been concerned with educational policies, but, in this decade of educational reform proposals, economists have not made much effort to translate research into direct policy implications. This is particularly true with respect to federal government policies. This paper provides an overview of current federal involvement in education and considers what, if anything, research has to say about potential policy changes.

At the outset I should make it clear that I believe that the general alarm about the state of our educational system is warranted. The educational system that produced so much of the wealth and opportunity for advancement in the United States in the past now faces serious problems. At the same time, I am quite skeptical about the efficacy of a much expanded federal role in education at this time.

I. Background

The evidence of an educational crisis comes from several sources. There is anecdotal evidence that businesses increasingly find school graduates lacking in skills (see, for example, CED, 1985). These outcries are reinforced by more objective evidence. Perhaps the most widely cited data relate to the fall in scores on the Scholastic Aptitude Test (SAT): The average combined score of 958

in 1966 fell to 890 in 1979 and has only now edged back over 900. Part of this fall simply reflected changing test-taking populations, but a significant portion represents a real decline in achievement (CBO, 1986; 1987). In many ways, however, the SAT scores are not the data with the worst implications. For example, in a 1981 comparison of mathematics achievement across a number of developing or developed countries, U.S. eighth graders performed at or below the median.¹ By the twelfth grade, the U.S. students were very close to the bottom, surpassed, for example, in advanced algebra by such countries as Hungary, Belgium, and Finland along with Hong Kong, Japan, and England.

The linkages between declines in educational performance and in the pace of technology and productivity improvement in the national economy are difficult to establish conclusively, but few doubt that at least a portion of the decline in productivity growth of the economy is linked to the decline in educational performance.² This connection appears particularly plausible in the areas of mathematics and science, where recent National Assessment of Educational Progress (NAEP) data show a picture of slow recov-

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¹Curtis McKnight et al., 1987. On the other hand, the United States also lagged behind most industrialized nations in the 1964 international comparisons of mathematics tests for 13-year-olds (Torstén Husen, 1967).

²The importance of general human capital has been emphasized both in early growth accounting (see Edward Denison, 1974) and more recent modeling of long-term growth (see Robert Lucas, 1988). The formal models do not specifically deal with educational quality, although such concerns are clearly present. Direct investigation of quality-productivity relationships yield varied results; see the review and discussion in John Bishop (1988).

ery from significant declines during the 1970s. Moreover, observed improvements in test performance appear to involve shifts away from complex reasoning skills (CBO, 1986). Concerns about international competitiveness of American industries obviously enter throughout these discussions.

Beyond the aggregate problems with educational performance are other issues about the distribution of opportunities and performance. Specifically, even though there have been recent relative gains, blacks and Hispanics continue to complete significantly less schooling than whites, and they continue to have dramatically lower achievement levels. For example, in 1984 the average black SAT math score was 375 compared to 491 for the average white—differentials that are probably understated because of selection effects. Differences in educational performance show up directly in incomes and labor market achievement of minorities.

II. The Federal Role

The federal government has never assumed primary responsibility for providing education at either lower or higher levels. Overall, federal funding has amounted to 8.5 percent of total spending—6 percent of elementary and secondary and 12.5 percent of higher education.

The federal role in education has been quite specific. First, the federal government assumes substantial responsibility for the additional demands on schools of special populations: the educationally and economically disadvantaged, the handicapped, and so forth. This is appropriate because these are national responsibilities that we take on from a societal viewpoint. To the extent that we are attempting to encourage social mobility and to provide equal opportunities, the federal government has a clear advantage over lower levels of government.

Second, the federal government has a primary role in research, information gathering, and dissemination. This reflects the obvious economies in providing these functions on a national basis.

Third, but less widely accepted, the federal government may have a role in insuring

that the education provided meets certain minimum standards. Thus, if some states did not provide a sufficiently high level of education, the federal government might become involved.

III. Elementary and Secondary Schooling

The role of providing elementary and secondary education has traditionally been assumed by states and local school districts. During the mid-1960s, the federal government expanded its role largely through the provision of compensatory funds linked to the War on Poverty. For public elementary and secondary schools, the federal share of funding grew from approximately 4 percent during the 1950s and early 1960s to 8–10 percent during the 1970s. From its peak of 9.8 percent in 1979–80, it fell to somewhat below 6.5 percent today.

Federal programs are concentrated on disadvantaged and special programs. The largest components in the Department of Education are: Chapter 1 (previously Title I) expenditures for educationally disadvantaged (\$4.6 billion in FY1989); funding for education of the handicapped (\$1.5 billion in FY1989); and money for rehabilitation services and handicapped research (\$1.7 billion in FY1989). (This list does exclude child nutrient, Headstart, and Job Corps programs run by other federal departments.) The general pattern (with some variation) during the 1980s has been an increase in the nominal program funding with a fall in the real value of those funds. (Data on program recipients, however, are seldom available, making analysis of per pupil expenditures impossible.)

Throughout the period there has been a fairly steady call for a variety of expansions to our federal efforts and funding of education. Arguments for program expansion are frequently related to larger arguments about the role for the federal government in education. First, as described previously, the national needs are clear and obvious in the sense that we know something is wrong. Second, an argument that is used less frequently over time, the federal government is better able to raise funds than the financially strapped state and local governments. Third,

something as important as education should not be left to the vagaries of state and local governments, some of which may value education "improperly" low.

There are well-known arguments on the other side also. First, increased federal funding would necessarily lead to lessened local control of schools and to making decisions with poorer information about demands and educational needs. Second, federal deficits imply that funding at the federal level is not really easy.

But the most important argument against a simple expansion of current programs is that *we have little reason to believe that an increase in funding of current school programs will lead to a noticeable improvement in performance of students!*

Over the past two decades, expenditures per pupil (funded from all sources) have increased at a compound rate of over 3 percent per year after allowing for inflation. Such real increases have been the result of lowering class sizes, increasing the salaries of teachers, and expanding a wide variety of other services in the schools. Lack of expenditures itself does not seem to explain declines in performance.

There has been an enormous amount of detailed research into the educational production process, and it supports the view that lack of expenditures is not the primary problem. The most prevalent uses of additional money available to schools—reductions in class sizes and increases in teacher salaries—appear unrelated to the performance of students. Simple tabulations of the findings (reported in my 1986, 1989 papers) show vividly that traditional approaches based on conventional rules of resource usage are not likely to be very productive.

This does not say that increased funds could not be effective. Nor does it say that there are not examples of successful compensatory programs and regular schools. The evidence simply indicates that such success cannot be realized simply by expanding the funds available without changing institutional structure, including incentives for teachers.

Put succinctly, the highest priorities should be improving the quality of teachers and

making sure that good teachers remain in the classroom. Accomplishing these goals is more a matter of providing appropriate incentives and hiring mechanisms than of increasing all salaries.

These results about the effectiveness of direct spending generally hold for specific programs (such as Chapter 1) as well. Some studies suggest improvements through specific compensatory programs; others cannot detect any such relationship. In any event, however, effectiveness seems unrelated to the level of expenditure (Stephen Mullin and Anita Summers, 1983). The most persuasive supporting evidence for the effectiveness of the federal compensatory education funding is simply that minorities and urban students appear to have made relative gains during the past ten to fifteen years, just when effects from federal spending might be observed. But of course this aggregate finding is subject to a wide variety of interpretations. I personally do not find the indirect evidence to be very compelling in the face of the direct evidence to the contrary.

Possible Changes. There are two directions of change in federal programs that seem productive. First, the federal government could move generally toward institutional changes that emphasized achieving performance standards (i.e., that emphasized output objectives). The provision of incentive funds and money to aid in implementation and evaluation of such changes could be a very profitable investment. Second, the federal government could broaden support for research, experiments, and demonstrations about successful or innovative technologies (including institutional structures).³

In many ways, this is a traditional economist's solution: look for policies that work toward outcomes of interest—like in-

³The evidence about the effectiveness of federal research efforts in education is not very encouraging, and improvements would be needed in the institutional structure of these efforts. It is noteworthy, for example, how little useful data relevant for investigating input-output relationships have been collected between the "Coleman Report" (1966) and now. Further, federal spending itself has never involved any serious notion of accountability for results.

roducing competition or paying those who produce more. The alternative, to which policymakers at all levels have generally gravitated, is designing policies toward inputs, this in a world where we both do not understand the input-output relationship and do not have any incentives directed toward increasing output. The federal efforts should concentrate on providing leadership and information about effective organization and practice within the schools, and lack of funding is not the major obstacle to this.

There is one other closely related area that deserves special mention. There has been considerable attention given to some combination of child care and preschool education, particularly for disadvantaged students. Indeed, the federal government has historically been involved through Headstart and related programs. Again, while I am sympathetic with the goals of such program, the evidence about effectiveness is slim and contradictory. The bulk of support for much of the recent policy discussions comes from a single study (the Perry preschool program) which involves 58 experimental and 65 control students followed over a twenty-year period. See John Berrueta-Clement et al. (1984).

IV. Higher Education

The primary thrust of the federal government in higher education has been the provision of grants and loans to low- and middle-income students to ensure access and choice of schooling. Traditionally, the federal government has provided the majority of direct student aid while the states have made about two and a half times larger expenditures through the provision of public institutions of higher education. In fact, the provision of access can be thought of as being taken care of almost completely by the states through public institutions.

The two principal programs of the federal government are Pell Grants and Guaranteed Student Loans (GSLs). The Pell Grants require no repayment. The GSLs provide subsidized loans that must be repaid but that frequently are not repaid. The subsidy comes from below-market interest rates, payments

to originating lending institutions, and federal coverage of any defaults.

The Pell Grant program, operating at \$4.5 billion for the coming year, has expanded in nominal terms throughout this decade, but it has done so in part by increased eligibility. Increasing numbers have used Pell Grants for tuitions at proprietary training schools as opposed to colleges and universities. Eligibility and award sizes for both Pell Grants and GSLs are income based. The GSL program, amounting to \$3.1 billion, has been a significant subsidy to more middle-class families.

The impact of these federal aid provisions on college attendance has been very difficult to establish. Some econometric studies have reported noticeable increases in the probability of attending college due to Pell Grants, but this is not seen in aggregate statistics. (See the summary in Larry Leslie and Paul Brinkman, 1987, and the aggregate data in Arthur Hauptman and Maureen McLaughlin, 1987). Distinct differences in the probabilities of college attendance remain among different parental income groupings, and the federal aid has not closed this gap over time.

While the federal aid has almost certainly had some effect on overall attendance, its largest impact is probably in insuring choice among different institutions. The availability of aid allows students without substantial resources to consider attending four-year colleges and private institutions instead of being relegated just to two-year colleges and the lowest cost alternatives.

The most frequently suggested change in higher education policy is going further in improving access to our entire population—insuring that bright students from poor families can obtain the best education available to them. There are several options that immediately arise in this context.

First, existing programs could be expanded. Because they are currently entitlements (or quasi entitlements), this would mean either increasing award levels or broadening the income eligibility standards. Second, award levels could be increased within the current budgetary levels either by tightening the targeting on needy groups, by restricting programs to colleges and universities, or by collecting the debts. Third, a

variety of new programs, both subsidized and unsubsidized, have recently been suggested. These include moving into income contingent loans and providing different tax breaks for educational savings or expenditures.

On the other hand, there appears to be no really compelling argument for expanding the total amount of subsidization of higher education. Most of the gains from higher education are captured by the individual student in terms of higher earnings, and therefore overall we would expect students to make good decisions about whether or not the gains to college were worth the costs. We pursue our current subsidy programs to promote social mobility, and, while this is definitely worthwhile, its appeal diminishes as we go into higher and higher levels of the income distribution. Improving the existing levels of support could be accomplished therefore by improved targeting of programs.

Because of the difficulty of borrowing for higher education, it is also appropriate for the federal government to facilitate the market for loans. But again there is no strong argument for subsidizing these loans.

The biggest subsidy currently is the loan guarantee. If there were a collection mechanism, such as using the Social Security withholding system, the default rate could be reduced to very low levels. This would allow a broad expansion of the loan system—making it available to all income levels, for example—without placing heavy burdens on the federal budget. This is clearly not free because operating a variable rate of collection of withholding payments would add to current expenses. On the other hand, the costs could be much lower than those under the current guarantee system.

Some of the current proposals have suggested a further extension of the program to make the amount of repayment a function of the person's later earnings (see, for example, Robert Reischauer, 1989). This income insurance aspect represents a significant shift in philosophies, and opinions vary on the appropriateness of such a policy. Nevertheless, while there is some difficulty in estimating participation and income growth rates,

there is no inherent reason that such a program entail any net governmental spending.

V. Conclusions

There is a tendency to equate concern about an issue to budgetary commitment. The corollary is that if our concern grows, so should the budget.

I think that this is incorrect logic in education (and perhaps more generally in across many governmental programs). Without a major reconsideration of the appropriate role for the federal government and without considerable expansion in our understanding of educational performance, I think that dramatic changes in federal spending would be unproductive. There are several areas of educational policy that demand governmental attention and action, but they are not ones that require large new funding.

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