DOCUMENT RESUME

ED 106 378 UD 015 100

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TITLE The Effectiveness of Secondary and Higher Education Intervention Programs: A Critical Review of Research.
PUB DATE Apr 75
NOTE 37p.; Paper presented at the annual meeting of the American Educational Research Association (Washington, D.C., April 1975)

EDRS PRICE MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS Academic Achievement; College Students; *Compensatory Education Programs; Disadvantaged Youth; *Higher Education; High School Students; Intervention; *Program Evaluation; Research Problems; *Research Reviews (Publications); *Secondary Education; Underachievers

ABSTRACT

This paper reviews and synthesizes the available literature concerning the effects of intervention programs at the secondary and higher educational levels. In achieving an understanding of the design of these efforts it is important to recognize that the first projects, e.g. the Demonstration Guidance Project, Higher Horizons, established a virtually universally followed model of educational intervention which: (1) employed a "deficit" model to account for differential rates of academic achievement; (2) offered supportive educational services; (3) worked with a segment of the "disadvantaged" population; and, (4) concentrated on the development of reading and mathematical skills. While most of the studies considered possess serious methodological weaknesses, the resulting evidence nevertheless suggests that the projects have increased the numbers of students graduating from high school and applying to, enrolling in, and graduating from college. The findings also indicate some positive impact in the areas of academic values, attitudes and motivations. But neither the gap in academic achievement between "disadvantaged" and "advantaged" students nor the academic achievements of participating students relative to non-program students from similar backgrounds seems to have been affected. (Author/JM)

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The Effectiveness of Secondary and Higher Education Intervention Programs: A Critical Review of the Research

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An extensive review of the evaluation studies of secondary and higher education intervention programs was undertaken to assess the academic, motivational, and social consequences of these programs upon "disadvantaged" youngsters. While most of the studies considered possess serious methodological weaknesses, the resulting evidence nevertheless suggests that the projects have increased the numbers of students graduating from high school and applying to, enrolling in, and graduating from college. The findings also indicate some positive impact in the areas of academic values, attitudes and motivation. But neither the gap in academic achievement between "disadvantaged" and "advantaged" students nor the academic achievements of participating students relative to non-program students from similar backgrounds seems to have been affected.

Paper presented at the annual conference of the American Educational Research Association, Washington, D. C., 1975.

The Effectiveness of Secondary and Higher Education Intervention Programs: A Critical Review of the Research*

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Since the 1950's many large-scale intervention programs have been created to foster equality of educational opportunity among diverse social groups. These projects have sought to enrich the educational experiences of "disadvantaged" students by providing them with additional instructional and supportive services. At the secondary and post-secondary levels, such programs have usually sought to raise the academic achievements and motivation of the participants and increase the numbers of such students graduating from high school, enrolling in college, and graduating from college.

Although these intervention efforts have been in operation for many years, little is known about their collective impact upon the targeted populations. The present paper attempts to alter this situation by reviewing and synthesizing the available literature concerning the effects of intervention programs at the secondary and higher educational levels. In achieving an understanding of the design of these efforts it is important to recognize that the first projects, e.g. the Demonstration Guidance Project, Higher Horizons, established a model of educational intervention which:

*This paper is based upon a report conducted under Contract Number OEG-0-74-3580 for the Office of Planning, Budgeting, and Evaluation of the U.S. Office of Education. We are particularly indebted to Robert H. Berls and J. A. Davis for their assistance in the preparation of this review.

(1) employed a "deficit" model to account for the differential rates of academic achievement between children of differing social classes, (2) offered supportive educational services, such as tutoring, counseling, and cultural enrichment, (3) worked with a segment of the "disadvantaged" population, principally those students considered to possess academic potential, and (4) concentrated by and large on the development of reading and mathematical skills. This general approach is evident in virtually all the programs considered in this review, e.g. Title I projects, Upward Bound, Educational Talent Search, College Bound, Special Service projects, SEEK, and the College Discovery and Development Project. That so little attention has been paid to the utilization of alternative modes of educational intervention is particularly noteworthy.

Synthesizing the results of the evaluations of secondary and post-secondary intervention programs is a difficult and hazardous enterprise. Different outcomes have been examined for different populations, at different points in time, in different educational settings, using different measures and different research designs. To believe that the studies reviewed herein inevitably lead to one general conclusion about the success or failure of intervention programs would be naive. Judgments concerning each study's strengths and deficiencies must be made; decisions about the relative weighting of each study and its findings formed. What seem appropriate judgments to us may very well be considered inappropriate to others. Nevertheless, we believe that throughout this review we have tried to be open-minded in our criticisms of programs and their evaluation studies, and as "objective" as possible in our conclusions.

Intervention Programs: A Brief Overview

As noted earlier, the overriding objective of intervention programs is the alteration of the educational achievement patterns of "disadvantaged" students. Coleman et al. (1966) have shown that the average minority student scores lower on tests of verbal and nonverbal skills at every grade level than the average majority

student. Without external intervention this achievement disparity between youngsters of differing social classes becomes larger at the higher grade levels. Implied by this trend in learning differences is a direct relationship between the size of the "learning gap" and the number of years individuals spend in neighborhood schools.

Intervention programs at the secondary and higher educational levels seek to stop and even reverse this trend. They do so largely by selecting "promising" children of the poor and, through the improvement of their educational performance, help them attain a college education. At the same time a number of post-secondary programs have also sought to redirect the value orientations and achievement motivation of participating youngsters. In order to achieve these ends, intervention programs have tended to rely exclusively upon the following supportive services: financial assistance, counseling, tutoring, cultural enrichment, and remedial instruction. Such tools, however, have been employed in ways which have had little impact upon the structure of the target schools. Changes in the school administrative structure, values and behaviors of the regular teaching staff, and ongoing instructional techniques are infrequent. The structure of these programs suggests that their designers view the "disadvantaged" student and his immediate environment, not with the school system, responsible for any achievement lag.

Secondary School Intervention Programs

The secondary school intervention programs to be reviewed in this section originated in the 1960's. All are supported by the Federal government and most have attempted to raise the academic performance of the participating students. Although some projects have included provisions for counseling, motivational training, and medical services, these actions remain secondary to the goal of heightened academic performance.

There are, however, a number of significant differences between the various secondary school intervention programs. Title I projects, on the whole, have concentrated largely upon a pupil's

junior and senior high school achievement. Whether or not the pupil eventually enrolls in an institution of higher education has remained secondary, college attendance not being viewed as a criterion for judging the intervention's effectiveness. Non-Title I programs, on the other hand, have been very much interested in having participating students continue their education beyond high school. Failure to do so has been viewed as a reflection of the program's meager impact.

Just as some important differences emerge between the program goals of Title I and non-Title I projects, so do some distinguishing differences occur between these programs in the educational techniques they employ. Title I projects, for example, are normally administered by the schcols themselves as expansions of the ongoing school programs. Equipment are added, inservice teacher training sessions held, curriculum specialists hired, and additional school materials purchased. Non-Title I programs do not always cooperate as closely with the participating school system. Summer or after-school sessions may be held, counselors and tutors employed to work with youngsters without regular teacher input, and measures taken, external to school counseling, to improve a youngster's knowledge about college.

Beyond these broad comparisons, each program has its own specific characteristics which distinguishes it from the other programs. It is to a detailed discussion of each program that we now turn.

Title I Programs

The Elementary and Secondary Education Act of 1965 generated a variety of secondary school intervention programs. Fundamentally it sought to provide financial assistance to local educational agencies serving children from low-income families. Funds for the program were intended to create, expand, and improve educational programs for these children (U.S. Department of Health, Education, and Welfare, 1970). Under the provisions of the Act, local agencies identified areas in their communities which had high concentrations of poor youngsters. They then determined the educational needs of this particular population and created programs to meet them. Involvement by the United

States Office of Education in other than fiscal, statistical, evaluative, and certain limited administrative matters, was discouraged (Office of Planning, Budgeting, and Evaluation, 1973). Consequently, the U.S.O.E. has largely concerned itself with the way states carry out their monitoring of Title I programs, the provision of technical assistance to the states, and the sponsorship of national one-shot studies (Wholey and White, 1973).

In 1967 over nine million children took part in these federally sponsored projects. Most of these pupils were enrolled in elementary school. About 65% were non-white (Glickstein, 1969; McDill et al., 1972). Per pupil expenditures in 1968 ranged in amount from $142 to $257 (McDill et al., 1972). By 1972 approximately $1,600,000,000 was being spent on Title I projects (Office of Planning, Budgeting, and Evaluation, 1973). Figures on secondary school programs, however, are rather sparse.

Determining the extent to which Title I projects have succeeded at the secondary school level is a difficult task. As Hecht (1973) has pointed out, the perennial evaluations which were mandated under the original act have been highly flawed. The objectives of the law were vaguely stated. No time for planning was allotted for the establishment of comprehensive, systematic, and objective program evaluation or for the preparation of those educators who were to carry out the program guidelines. Appropriations were made during the school year so that districts tended to channel the funds into such conventional areas as instructional materials, plant construction, and additional staff. In short, careful program assessment did not occur in Title I's first years.

The early evaluation reports, moreover, are characterized by the use of a "compilation" methodology (Hecht, 1973). Project information was gathered by local educational agencies and passed along to the state educational agencies. This information was later forwarded to the federal government. These data largely concerned dropout rates, testing results, and attendance rates. Unfortunately, these data were frequently non-comparable across states; in some instances non-comparable within states.

The usefulness of these data is also hampered by its focus on elementary students. The 1968 evaluation of Title I programs, for example, virtually ignored any mention of intervention projects at the junior or senior high school level (U.S. Department of Health, Education, and Welfare, 1970). Information, if reported, is frequently combined with data on elementary school programs so that conclusions about projects for adolescents are risky.

Despite these severe limitations, some tentative remarks about the nature and effectiveness of Title I programs for secondary school students seem appropriate. Among the more important results is that program funds have largely been invested in supportive educational services (American Institutes for Research, 1972). Glickstein (1969) reported that in the 1966 fiscal year 20% of the total Title I allotment was spent on educational equipment and 10% on school construction. The National Advisory Council on the Education of Disadvantaged Children noted that in 1969, school districts attempted to reduce the size of their classrooms by "meaningless" numbers, while trying to enlarge their available supply of equipment. Existing academic programs have not generally been affected in structure or content by these federal funds.

A second significant conclusion is that little evidence, other than teacher opinions, exists to demonstrate an overall positive program impact on participating students. Many programs, e.g., New York City's College Bound Program, San Jose's Project R-3, and Hamden, Connecticut's Independent Study Project (see the appendix for more detailed information on these intervention efforts), have had success in augmenting pupils' academic skills but numerous others have failed to produce similar results (General Electric Co., 1968; McDill et al., 1972; U.S. Department of Health, Education, and Welfare, 1972; Office of Planning, Budgeting and Evaluation, 1973; Wargo et al., 1972). A number of states, e.g., Alabama, California, Kansas, Ohio and New York, have reported student cognitive gains of a year or more per year of schooling but these results require more rigorous substantiation due to insufficient control of various input and process variables.

It began in the summer of 1965 with the establishment of eighteen pilot programs involving about 2,000 high school students. By 1966 it had spread to 218 institutions and included some 20,000 youngsters; in 1970, 292 institutions were participating in the program, enrolling 24,201 students and funded for about 28 million dollars (Office of Planning, Budgeting, and Evaluation, 1973). The number of projects had grown to 316 by 1972, with an enrollment of 24,786. Approximately $206 million has been allocated to the program from 1965 through fiscal 1973 and of the 90,805 pupils who have participated, 21% or 19,238 are continuing their studies presently (Comptroller General, 1973). First operated by the Office of Economic Opportunity, the program was transferred to the Office of Education in 1969.

Upward Bound attempts to identify "promising" college students from families having annual incomes which fall below the federal poverty line. Those located would have been overlooked by the normal college selection procedures since they lack the requisite academic qualifications and preparation. Most probably they would not have sought a college education (Comptroller General, 1973). To find these students a diverse body of sources is tapped to recommend program participants, from the public schools to community groups and youth authorities (U.S. Office of Education, 1969). Of the 10,000 Upward Bound students graduated from high school in 1968, about 60% were black and 35% white with a nearly equal distribution of males and females (Greenleigh Associates, 1969).

Once identified and involved with the project, the students are encouraged and supported in their effort to obtain a college degree. They attend a six to eight week summer session at a cooperating college, university or secondary school following their sophomore, junior, or senior years in high school. These are occasions when remedial instruction in reading, writing, and mathematics is worked on and a variety of culturally and motivationally enriching experiences are presented.

After the summer session the program continues in the form of after-school meetings and sometimes Saturday get-togethers. Addi-

tional tutoring, counseling, information giving, and culturally broadening experience usually take place during these times (Comptroller General, 1973). While Upward Bound does not provide financial support to students beyond high school, most students are able to obtain financial support for their post-secondary education from their collegiate institutions. Involvement with the program, for the most part, terminates at this time, though some do participate in summer programs which bridge the completion of high school and the beginning of college. Furthermore, some youngsters may be asked to assist the Program in the location and encouragement of other qualified project students.

In the fiscal year 1971, roughly $28,500,000 was spent by the federal government to operate this program. For the 24,000 participants this represents an average per student expenditure of $1,200 (McDill et al., 1972). From 1965-1973, a total of $206.1 million was obligated to the program. These funds took care of the costs of student stipends and those relating to program instruction and materials. While in college, a participant had to rely on a variety of other means, from Educational Opportunity Grants and NDEA loans, to Federally guaranteed loans and local grants.

Evaluation studies of Upward Bound have not only been numerous but also, on the whole, quite favorable. For example, the U.S. Office of Education reported that of the approximately 64,000 pupils in the program between 1965 and 1969, 73.4% graduated from high school and 75.4% of these high school graduates planned some form of post-secondary education (Melnick, 1971; Shea, 1967; Cohen and Yonkers, 1969). Moreover, 66.5% of this total graduating high school cohort enrolled in two- or four-year colleges, a rate somewhat above the national average and clearly above that for comparable groups (Berls, 1969). This college attendance rate appears to be corroborated by the findings from a number of individual programs. Hopkins (1969) found that most of his sampled students went to college and that 75% of them returned their sophomore year. Granowsky (1969) reported that 100% of the Upward Bound class at Marist College went to college and 83% of this group was still there

after two years. Glickstein (1969) documented a retention rate of 65% to 80% from 1965-1968. He also pointed out, however, that all respondents to an OEO questionnaire in 1967 (a response rate of just 23%) cited insufficient funds and need to work part-time as causes for their inability to devote more time to their studies. Billings (1968) stated that in 1965, 80% of the project students were admitted into college and that 88% of the college freshmen who were part of the program remained in school for at least another year. In 1966, 78% of the project students went to college and about 80% were still in college after two years. The factor(s) responsible for these heightened college retention rates is unfortunately unassertainable from the literature.

Academically the findings have usually been discouraging. McDill, et al., (1972) reported that the students' high school grade point averages did not change as a result of the program. Lang and Hopp (1967) compared a national sample of 1,853 program students to those participating in a project at Rutgers University. They learned that in both groups motivation for college rose during the summer sessions but not necessarily during the regular school year. Non-Rutgers students achieved lower grades upon their return to high school after the summer meetings and experienced a decline in academic motivation. On the one hand, it has been suggested that such depressed grade performance reflects the students' dissatisfaction with the regular high school program (Greenleigh Associates, 1969). Such disenchantment can be viewed as their resocialization to alternative values and perceptions, quite possibly an unavoidable, unintended consequence of the program's attempt to integrate its participants into the wider social system. The failure to produce improved grades, on the other hand, has been given a more sinister interpretation. Posner (1968) hypothesized that this behavior was an indication that the regular school teachers were attempting to punish the program students for their attempt to "make it" and circumvent the normal system. Regardless of the interpretation placed upon this situation, the problem remains as to how to avoid having the return to the regular high school become an academically debilitating experience.

In 1973 the General Accounting Office reviewed fifteen Upward Bound projects in nine different states. It found that it could not determine the precise effectiveness of the projects in equiping participants with academic or motivational skills, but that they appeared to be wanting in these areas. Regarding college entrance and graduation for the participants the agency felt that the OEO figures were overstated by 10% and 30%, respectively. Projects lacked specific measurable objectives and the curriculums were not designed to remedy student weaknesses. There was no widespread use of formal achievement and diagnostic testing and program monitoring was extremely deficient. It also concluded that 22% of the students were not underachievers and 15% did not come from families meeting the maximum income criteria. Most importantly, by 1973, 20,261 or 28% of the total number of program members had completed the project and were still in college; 21,201, or 30%, had dropped out; 14,935, or 21%, completed the program but did not enroll in college, and the remaining number of students finished Upward Bound, enrolled in college and then dropped out (Comptroller General, 1973).

These findings contrast sharply with those reported by Greenleigh Associates (1969). This organization found college enrollment rates to be about 70% of those actually in the program and retention rates for those in the program between 1966 and 1969 to be equal or better than the national average for all college enrolled youngsters. Program pupils were indeed academically underachieving and economically deprived, although many did not seem to need the program to increase their college aspirations. Only 10.2% of the youngsters, for instance, changed to a college preparatory curriculum.

Upward Bound has also been examined in terms of its noncognitive and nonbehavioral consequences. Hunt and Hardt (1969) used cross-sectional data to assess the program's effects on students in grades 9-12. Looking at a variety of attitudinal measures these researchers discovered that program involvement increased an individual's self-esteem, strengthened his/her internal locus of control, and promoted his/her future orientation. Black students in this study consistently scored higher than whites on measures of the importance of college

graduation, self-evaluated intelligence and self-esteem. White pupils scored better on items determining motivation for college, interpersonal flexibility, internal locus of control, and non-alienation.

Of the poverty level students enrolled in pre-college programs in Davis's study (1973) more than 75% felt [illegible] intervention efforts did not affect their decision to go to college.

In one of the rare cost-benefit analyses of intervention programs Garms (1970) found net private benefits for white and nonwhite males and females at discount rates of 5 and 10 per cent. Social net benefits were positive at a discount rate of 5% but negative at 10%. He noted that the program may function more as a means of locating those disadvantaged students who are inclined to go to college rather than as a means of assisting individuals who would otherwise be unable to continue their education.

Garms' article has encountered some justifiable criticism. Christoffel and Celio (1973), for example, pointed out that in Garms' original report for the Office of Economic Opportunity he reached the following alternative conclusion:

> (1) Upward Bound students are generally representative of the academically underachieving and economically disadvantaged youth in America; (2) the Upward Bound program is an effective dropout prevention program as well as a channel to college; and (3) college retention rates of Upward Bound graduates are equal to or greater than the national average.[1]

They then note that the use of Upward Bound siblings as a control group deflates the benefits of the program since a similar delayed college entrance rate is not taken into account for program participants. Moreover, the inclusion of siblings with vocational-technical training overestimates their college attendance rates, while a similar procedure was not followed in classifying the Upward Bound students; similar problems are noted with Garms' determination of

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[1]Pamela Christoffel and Mary Beth Celio. "A Benefit-Cost Analysis of the Upward Bound Program: A Comment," Journal of Human Resources, 1973, 8, p. 110.

high school graduation rates. Finally, Christoffel and Celio criticize the use of a 10% discount rate on the basis that it is entirely arbitrary and, coupled with the previous deficiencies, tends to underestimate the impact of the program upon its participants.

Educational Talent Search Program

The Educational Talent Search Program was intended as a companion intervention effort to Upward Bound.[1] Created by the Higher Education Act of 1965 and amended in 1968, the program sought to discover, recruit, and assist "exceptionally" capable students for admission to college. Program members were given informational, financial, cultural, and motivational assistance to achieve this end. Most came from economically deprived backgrounds and ranged from seventh to twelth graders (Office of Planning, Budgeting, and Evaluation, 1973).

Project grants are given to colleges or public and private agencies and organizations. These groups are responsible for locating qualified students and encouraging them to join the program. Contracts and grants to such organizations are limited to $100,000 per year. Total funding for this program in 1972-1973 amounted to about $5 million and was allocated to some 82 different projects. Approximately 125,000 youngsters were served by this project with 28,612 going on to some sort of post-secondary schooling. In addition, 1,684 high school dropouts were located and persuaded to continue their education, while 2,039 others were stimulated to enroll in high school equivalency programs (Office of Planning, Budgeting, and Evaluation, 1973). Talent Search has recently directed its efforts to Vietnam veterans, 20-25% of whom have

[1]This program is not to be confused with one of a similar name but earlier origin. A number of independent schools in the 1960's were involved in their own "Talent Search" programs (Rees, 1968). These efforts were generally characterized by summer study sessions for "disadvantaged" high school students and the awarding of special grants. In 1966 Dartmouth College joined in these efforts by inaugurating an eight-week session known as Project ABC. One thousand two hundred and eighteen students took part in the program from 1964-68.

earned less than a high school education.

Mulligan (1970) reports that one project in the South has counseled over 13,000 individuals and "provided" financial assistance to approximately 3,500--from the payment of a college application fee to the awarding of a full college scholarship. Unfortunately, information on most of the other projects is unavailable presently. The most wide-ranging comparative evaluation of these programs is currently underway (Pyecha, et al., 1974). More conclusive determination of the impact of Talent Search programs must await the result of such studies.

College Bound

In the summer of 1967 the New York City Board of Education began a project to locate and prepare students within economically deprived neighborhoods for college. Approximately 2,000 high school students participated in this effort. Half were black and about one-third were Puerto Rican. Virtually all had demonstrated good school attendance and posed no "behavioral problem," as judged by their teachers. These student characteristics point out the high academic focus of this program. About half of the students selected were at least a year behind in reading and mathematics as determined by their performance on standardized achievement tests.

Initially begun with a grant from the Carnegie Corporation of New York, the program is currently funded under Title I of the Elementary and Secondary School Act. Over 100 institutions of higher education and about 27 academic high schools participate (Capone et al., 1970). Eight and one-half million dollars was invested in operating the project in 1969.

The intent of College Bound was twofold. First, as its name clearly suggests, it attempted to encourage students to seek and attain college admission. Secondly, it wanted to equip them with the skills and motivation necessary for remaining in college once they were there. To promote this goal program members took part in a seven-week summer session to improve their English and mathematics skills before beginning high school. During the high school years participants were furnished with guidance counselors, college student aides,

and community personnel to help them with their academic work. Classes were kept small.

An important feature of the program was its "adoption" plan. Local colleges and universities made a commitment to offer admissions counseling, tutoring and other services to a particular program high school. Moreover, these institutions agreed to accept any student from the project who earned an academic diploma, met the Regents Examination requirements, and earned a grade point average of at least 70 (Capone et al., 1970).

While evaluations of full year programs are generally unavailable, studies of summer College Bound projects are. Hawkridge et al. (1968), for example, reported that project students demonstrated statistically significant gains during a six-week summer session on alternate forms of the Stanford Achievement Test. Another study showed that students in the 1967 six-week summer session gained in reading and mathematics in excess of that which would be expected for month-by-month instruction (American Institute for Research, 1969). These gains were also indicated by the performance of the participants on the New York State Regents Examinations. Over 700 students graduated from the program and high school in 1970.

Higher Education Intervention Programs

Intervention programs directed at "disadvantaged" post-secondary school students have one overriding concern--to keep the participant in the institution he is attending. Even though these programs have a common goal, they tend to emphasize different means to achieve that goal. Some see the problem of maintaining a "disadvantaged" student in college as a problem of finances. Thus the attempt is to provide this youngster with grants, loans, and part-time work. Other programs, however, may view the problem as one of academic preparation and the consequent need to provide remedial instruction and tutorial sessions. They may try to integrate the student only gradually into

the regular college program, or they may offer a somewhat different program altogether. Still other approaches to this problem may focus on the youngster's motivation. They see an inability on a student's part to get involved with his course work or, perhaps to identify with the other college students. Some programs perceive the participant in need of confidence and determination, and they therefore emphasize measures to foster these attitudes. But like secondary school intervention efforts, post-secondary intervention has not had a major impact upon the organization and operation of colleges.

Special Service Programs

The Higher Education Amendments of 1968 authorized several categories of post-secondary school intervention programs. One of these, termed "Special Service Programs," was designed to increase the numbers of students who, once admitted, remained in college or who, "by reason of deprived educational, cultural, or economic background, or physical handicap, are in need of such services so as to assist them to initiate, continue, or resume their post-secondary school education."[1]

To achieve these varied ends, Special Service Programs provided for the use of remedial instruction, tutoring, counseling, guidance, special summer programs, placement services, curriculum modifications, and other educational resources. These services were not characteristic, though, of all the differing campus projects.

By 1970-71 over ten million dollars was appropriated for special service programs to support some 121 projects with nearly 30,000 "disadvantaged" students (Davis, 1973). Funding grew to fifteen million dollars in 1971-72 for 190 projects involving approximately 51,500 students (110 of these projects having been carried over from the previous year). By 1972-73, nearly 48,700 students were being aided in some 208 projects with an average per pupil expenditure of nearly $300. Despite this sizeable expenditure, it has been

[1]Higher Education Amendments of 1968 (Title I, Part A, Section 105, P.L. 90-575), as cited in J. A. Davis (1973).

estimated that less than 19% of the estimated pupil target population requiring Special Service programs was being reached at that time (Office of Planning, Budgeting, and Evaluation, 1973).

An extensive evaluation of these programs has been carried out by Davis (1973) with generally mixed results. Overall, little positive indication was found of any significant impact of Special Service programs upon the academic achievements of the target populations. In terms of grade point average, for instance, Special Service students were unable to close the gap between their own achievements and those of regularly admitted students, differences between their high school grade point averages and college grade point averages remaining approximately the same. Even more disappointing was the finding that Special Service students did little better overall than did similarly disadvantaged students not in Special Service programs. And this finding did not appear to be affected by any differential emphasis upon specific programatic activities such as tutoring or counseling.

Nevertheless, it was reported that substantial changes had apparently occurred in the attitudes, values, and motivational orientations of the program participants - changes in non-cognitive program outcomes which were viewed as a positive consequence of Special Service programs. Indeed, nearly one-half of the program students were believed to have graduated from college and roughly 10% to have gone on to graduate school. And though one can expect some inflation of actual completion rates, these figures nearly parallel those for all college students and certainly exceed those for disadvantaged students as a group.

Differences between institutions and between differing ethnic groups within institutions were also noted, especially in the domain of attitudes, values, and expressed satisfactions. Suggested, in particular, was the notion that a program which may work well with one particular ethnic group may not work equally well with another group. The need for group-specific programs (e.g., for Native Americans, Chicanos, etc.) appears to have been a commonly held position among surveyed administrators.

It was further noted that students participating in pre-college programs demonstrated somewhat greater success and relative satisfaction on a number of issues than did students not participating in such programs. More importantly, where Special Service programs had a high degree of campus visibility, a "special stigma" was attached to the students in the program, a stigma that appeared to be the single most important impairment to their academic success. Students in these visible programs tended to be isolated from the mainstream of academic and social life of the college and tended to perform less well and be considerably less satisfied than did students in more centrally located programs. The most productive programs, in terms of students' achievement, appeared to be those with a "strong leader (usually a member of a minority group) with a secure position within the institutional administrative hierarchy and a voice in admissions and financial aid decisions" (Davis, 1973, pp. 45-46). The more integrated the program was into the academic system of the college, the more successful the program seemed to be; the more satisfied and successful its students tended to be relative to the regularly admitted student body. Similar types of conclusions were voiced by Gordon (1969) in a study of an Upward Bound graduating class.[1]

In most respects, programs in differing institutions were rather alike, the counseling and tutorial components of these programs being the most ubiquitous services offered. Grants, work study, and loans were also popular, existing at about 55% of the responding institutions. Approximately 35% of the students majored in the "soft sciences" and the humanities, and 29% in such professional fields as engineering and business.

To what extent the Special Services, singularly or in combination, were partly responsible for the program's limited success was, however, undetermined. The analysis simply did not permit the inde-

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[1]A striking parallel exists in the literature regarding the effect of school and classroom racial integration upon the achievement of black students. Again the notion of significant social and academic integration emerges.

pendent determination of the impact of differing treatments upon differing types of program students. And though cognitive academic performances seemed to be unaffected by Special Services, it was unclear to what extent changing attitudinal and motivational orientations would alter future attainments.

Educational Opportunity Grants Program

The Educational Opportunity Grants Program (EOG), Educational Talent Search, was created by the Higher Education Act of 1965. The principal purpose of this program was to provide financial assistance to qualified high school graduates who lacked the resources to obtain a college education, persons who, presumably, would not otherwise be able to attend college.

Program funds, for the most part, come from the federal government. Funds are allocated to the program participating colleges and universities which subsequently locate eligible students to receive funds for college attendance. The total amount of funds a particular college obtains depends upon a percentage of its federally approved program allotment (Friedman, 1971). In 1968, the average grant under this system for each participating individual was $460 (Glickstein, 1969); in 1972 this average rose to $580 (Office of Planning and the Budget, 1972). Individual support ranged from a low of $200 to a maximum of $1000 during the late 1960's.

Part of the federal guidelines call for the federal funds to be matched by monies from the participating colleges. Federal funds, by stipulation, cannot account for more than half of the student's college aid package.[1] Thus, at the University of California, Riverside, in 1970, the college provided program students with funds in a 1 to 5 proportion to the federal financial assistance offered. These college-derived funds can take a variety of forms, however. Since a number of EOG projects encourage (but do not require) students to work part-time after the completion of their freshman year, college jobs can be

[1]To be more precise, Federal aid cannot exceed $1400 or half of the student's college aid package.

offered as a means of support and grant funds, which therefore become available redirected to support entering freshmen.

In gross terms, the Educational Opportunity Grants Program has grown from an appropriation of $58 million in 1966 to $165 million in 1972 (Office of Planning and the Budget, 1972). At that time 2200 colleges were reported to be participating in the program with a total of 297,300 students being assisted. Of interest is the finding by Davis (1973) that 45% of the poverty level students found in Special Services Programs were also receiving EOG funds.

The most comprehensive and systematic evaluation of this federal program was undertaken by the Bureau of Applied Social Research in 1970 (Friedman, 1971). Surveying some 9800 EOG students and 580 aid administrators in more than one hundred higher educational institutions, this study concluded that the program was indeed locating and assisting students of exceptional financial need. Of the largely white assisted student population (68% being white), nearly 70% were from families that had an annual income of less than $6000. Black students, generally from the poorest family backgrounds, tended to obtain higher average grants than either white or other nonwhite participants, blacks making up the bulk of the nonwhite population being reached.

The study also noted institutional attempts to compensate for the academic deficiencies of the aided pupils. Remedial instruction, counseling, and tutoring were most frequently provided to those students identified as being in need of such services. Retention rates for program participants were noted to be about equal to those of non-program students, highest rates occurring in the private universities, lowest in the public two-year colleges.

Despite a number of apparent successes, nearly 60% of all EOG institutions reported their federal funding allocations to be insufficient for accomplishing program objectives. This assessment was especially strong among black colleges with over 72% of those institutions (which have about two-thirds of their students receiving financial aid) reporting a need for additional federal monies. It is noteworthy, in this respect, that the most recent EOG programs call for the provision of additional student aid to the colleges and

universities being served.

Higher Educational Opportunity Programs

Included in this category of post-secondary intervention efforts are a variety of college, local, and state programs to assist students from economically deprived familites. Such assistance has generally been in the form of financial aid, special instruction, and counseling as a means of assisting program students to adjust academically, socially, and psychologically to the demands of the college environment. While many such efforts exist across the country (Egerton, 1968), only a few of the more important ones will be discussed here.

SEEK. In 1966 the New York State Legislature and New York City set up an educational program to reach high school graduates from low-income families. Referred to as SEEK (Search for Education, Elevation, and Knowledge), the project initially enrolled 110 students, over 90% of whom had grade point averages of C.[1] All came from neighborhoods considered economically depressed and were thought to have experienced deficient high school training. Most had obtained commercial or general diplomas rather than academic ones. Nearly 90% were of black or Puerto Rican backgrounds. Had these students not participated in the program, it was estimated that a large majority would never have been admitted to the sponsoring institution, the City University of New York.

The main goal of the SEEK program was to integrate selected students into the regular academic program of the college and thereby gradually assist their attainment of a college degree. To do this, special classes were formed on the basis of participants' ability level and academic background. Tutors were provided and intensive remedial work undertaken to make up for insufficient high school training. Classes met more frequently than did regular college courses

[1]To become members of the program, students had to come from officially designated poverty neighborhoods, be under thirty years of age, possess a high school diploma, and have resided in New York City for at least a year. Those meeting these requirements were placed in a selection pool and a lottery system determined who was admitted to the program.

and focused upon the improvement of the students' basic skills. At the same time, during this period of introduction into the academic life of the college, participants were required to take at least one regular university course as part of the academic program. As students became more able to handle the work, they took more regular course credits.

Programs were designed, however, to meet the special needs of program participants. English was taught as a second language where needed. Books were free and weekly stipends of no more than $50 provided to cover expenses. SEEK classes ranged between 10 and 15 in size with a considerable leeway in program format, characteristics markedly different from those of regular program courses. Once students had matriculated from the program by accumulating 60 credits with an average of C, 30 credits with an average of 2.75 or 50 credits with an average of 2.25, they were entered in the regular academic program and treated the same as other regular college students (Melnick, 1971).

The program seems to have had mixed results. Of the original 100 students, 59 (or 54%) were still enrolled at the University in 1968. After two and one-half years they had garnered an average of 45 credits, but had done so at a level of academic performance (gpa) substantially below that of non-program students (Dispenzieri, et al., 1969b) and had done so at a considerably slower pace than had regular college entrants. Berger (1968) determined that 78% of the 1966 SEEK members enrolled for a fourth term and 88% of these students obtained an average of C or better. More importantly, from the perspective of program participants, was the finding by Melnick (1971) that 1968 SEEK students showed high levels of motivation and expectations for future academic success. Not surprisingly, their dropout rate, as a class, was relatively low. As noted earlier, high levels of motivations and future career expectations are strong predictors of college completion.

A question remains, however, as to the program's reach into the estimated target population. A 1969 survey of 1175 community agencies purportedly involved in the referring of needy students to the program drew a very low response rate, 23%. Of those replying, 67%

indicated that they had referred individuals to the program. Clearly, much needs to be done to increase the range of students selected for the SEEK program.

The College Discovery and Development Project. Like the College Bound program, the College Discovery program originated in New York City in 1964. It was jointly planned and administered by the New York Board of Education and the City University of New York. Project participants were chosen on the basis of their academic potential for college level instruction and their location in a disadvantaged area of the City. Most of those selected for the program would not have been admitted to a college or university because, in addition to deficient aptitude test scores and meager economic resources, their academic records were some ten points below the minimum required for acceptance.

Youngsters were chosen for the program by principals and teachers on the basis of their grades, test scores and recommendations. Attention centered on the selection of those students whose academic record, though deficient in many areas, indicated potential for heightened future attainments. From 1964-1968, 2325 were involved in the project (Melnick, 1971). Approximately 42% of these individuals were black and 25% Puerto Rican; about 50% were males.

The specific intent of College Discovery and Development was the provision to students of services like counseling, individualized instruction, culturally enriching activities, and financial aid so that they could complete a four-year college program. Participants were expected to enroll first in a community college and transfer after two years to a senior college for the duration of their schooling (Melnick, 1971). Throughout the program remedial work in reading, mathematics and science was emphasized. This work took place not only during the school year but also at a selected community college immediately prior to an individual's entrance into college.

Over 70% of the 1968 Discovery and Development graduates were accepted by the City University of New York. No more than 18% of these students are presently dropping out of the program (Office of Education, 1968).

An evaluation study by Dispenzieri, et al. (1969a) offers only

qualified support for the project. In this research comparisons were drawn between program and non-program students attending community colleges. It was found that the non-program pupils were greatly superior to program students in terms of their grade point averages. In addition, it was noted that 23% of the 1964 Discovery class and 28% of the 1965 class had completed community college by the beginning of 1968, a finding also arrived at by Kweller (1971). Those 1964 and 1965 program participants who did go on to a senior college had a mean grade point average of 2.11 on a four-point scale. Comparison of this academic achievement with that of the non-program students, however, is impossible since the mean grade point averages for this latter group was not provided.

Hawkridge, et al. (1968) discovered that comparisons between first year project students and a control group of randomly selected college preparatory students revealed no differences on such items as problem solving, reading, verbal reasoning, attained academic averages, or abstract reasoning. During the second year of program involvement, however, program students were surpassed by control youngsters on academic average and performance on the Foreign Language, Science, and Math Regents Examination, another indication perhaps of the particular program's meager impact.

Other Opportunity Programs. Kitano and Miller (1970) in a study of California Educational Opportunity Programs found that about 90% of the participants in 1967 and 1968 remained in college for at least a year. In the University of California system, regularly admitted students achieved a 2.67 freshman grade-point average; while EOP students only a 2.00. Inferences from these data are difficult, however, because of the absence of controls for differential student input characteristics (e.g., measured ability).

In an evaluation of a western public college Klingerhofer and Longacre (1972) discovered that the fifty-two students in the project progressed and persisted in college on an equal basis with students not in the program and matched on sex and high school of graduation. Like the regularly admitted, non-financially assisted students, however, about half of the project participants dropped out of college.

Unlike these other students, program students usually produced mediocre academic averages.

Conclusions

The Quality of Evaluation Research

For the most part, evaluation of secondary and higher educational intervention programs has been quite poor. Excluding the studies by Davis (1973) of the Special Service Programs, and by Friedman (1971) of the Educational Opportunity Grants Program, most evaluation studies have suffered from a wide variety of major shortcomings. First, the design of most evaluation research has been inadequate. Little, if any, attention has been given to the utilization of control or comparison groups for purposes of analyses and/or the regulation of the application of treatments during the program. Pre- and post-measurements are infrequently gathered. As a result, it is virtually impossible for an observer (indeed for the program administrators) to ascertain the independent impact of differing treatments upon the target population. This inadequacy in design applies as well to the failure to design feedback mechanisms which provide constant monitoring of program operation to administrators responsible for the continuation and/or alteration of program activities.

A second common weakness in evaluation research has been the rather poor specification, conceptualization, and operationalization of program objectives.[1] Many evaluative studies have tended to be rather loose in their definitions and conceptualization of outcomes. Terms such as "self-confidence," "satisfaction," and "achievement" are frequently left unspecified. When so stated, they are often poorly operationalized in terms of measures which can be monitored during a program's duration. Thus, even when a design is found to

[1]Though this clearly applies to the process of program planning as well, if not more so, it is argued here that evaluation research cannot ignore the specification of program goals as part of that evaluation process. Evaluation and planning must be integral processes.

be adequate (which it very rarely is), it is frequently impossible to determine what outcomes are to be expected and what measures are to be employed to determine if those outcomes are being achieved.

Equally important, in this respect, has been the limited conceptualization of the process of educational attainment. With few exceptions, as noted earlier, evaluation research has tended to limit its focus to formal program outcomes, such as those measured by cognitive measures (e.g., grade point averages and achievement tests) and/or by gross behaviors, such as retention rates and expressed opinions. The equally important, if not more important, informal learnings, such as indicated by self-concept and sense of control over the environment, have been virtually ignored.[1] Yet these measures, for instance, have been shown by Coleman (1966) and by St. John (1971) to be significant independent predictors of future achievement. Clearly, a more broadly conceptualized notion of the achievement process is called for in future evaluation research.

Another shortcoming of past evaluation research lies in the failure of evaluation to specify, more clearly, the formula for determining the success or failure of a program. Involved are two distinct problems. On one hand, little attention has been given to the differential weighting of different program outcomes in a manner which would allow overseers to compare success in one outcome with failure in another. On the other hand, little thought has apparently been given to the development of those criteria to be utilized in the determination of successful achievement of a given program objective. Most often, program administrators simply do not know when to alter a program or to reinforce a particular treatment simply because they cannot tell if the treatment has been successful.

But even if particular evaluation studies were not limited in these respects, evaluation of intervention programs would still be flawed by their failure to carry out longitudinal multi-program

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[1] One must exclude here the evaluations of the Upward Bound programs cited earlier. Even here, however, operationalization of informal learnings was far from adequate.

analysis, analysis which would follow programs from the moment of inception to final completion and do so in a manner which would permit researchers to compare similar programs in different settings and different programs in similar settings. At the moment, most evaluation research has been of the "ex post facto" variety and has limited itself to single program evaluations.

The underlying root of these shortcomings in evaluation research, we suspect, is the failure of evaluators to develop and utilize theoretical models of educational attainment: models of attainment which would specify the longitudinal process of attainment in a manner which relates individual, institutional, and interactional variables to each other and to the end-point of educational attainment and which would serve as guidelines for the development and evaluation of intervention programs. Hopefully, competing theoretical models of attainment can then serve as initiating forces for the development of alternative ways of attacking the complex problems of educational intervention. To date, most, if not all, programs have come at the problems of intervention in very much the same manner. They have tended to utilize, as noted earlier, old strategies to meet the demands of new problems. There has been, in effect, little experimentation with alternative modes of educational intervention.

Program overseers have argued, however, that many of the shortcomings of evaluation research are due to external constraints. Often cited are limitations in funding, shortages of well-trained researchers competent in evaluation, and time limitations imposed by outside authorities. But while these constraints are undoubtedly part of the problem, they cannot excuse the failure of past evaluation research to produce any substantial body of research findings. This is particularly true when such large amounts of social resources have been invested in programs whose successful attainment is viewed as an important part of a wider societal goal of equality of opportunity among diverse social groups.

Several other comments regarding evaluation are called for before proceeding to the programs themselves. First, there has been a tendency for evaluators to focus upon positive outcomes more so than

upon negative outcomes. While this may be understandable in one sense, in another it seems somewhat unwise. There can be as much to learn from unsuccessful attempts at intervention as there can be from positive ones. While the latter are obviously more appealing and attract more attention from funding agencies, the former can be as useful in the avoidance of future mistakes at intervention. As noted, there seems to have been too little of this "learning by past mistakes" in past evaluation research.

Finally, there appears to be a real need for evaluation research to be carried out by agencies which are midway between being entirely external to the program and being entirely subsumed within the program. Quite often evaluation carried out by external agencies appears to have missed much of the dynamic fabric of intervention (often coming on the scene sometime after the program has begun). In-house evaluations, however, seem to have been frequently affected by the desire to produce positive outcomes and thereby validate the efforts of the program. And though pre- and post-test measures are more frequent in "in-house" evaluations, objectivity of perspective has not always been a strong point of their evaluations.[1]

The Effectiveness of Intervention Programs

Given the problems of evaluation noted above, it is difficult to say how effective intervention programs have been at the secondary and higher educational levels. This is especially true when one seeks to disentangle the independent effects of differing treatments in different educational settings. The data are simply unavailable. Nevertheless, some broad impressions can be stated regarding their general impact upon the targeted populations.

Secondary education intervention programs. Despite all the difficulties in assessing past evaluations, it seems to be a reason-

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[1]The growth of research institutes concerned primarily with program evaluation is, in this respect, a welcome development. And when brought into the design process before the beginning of intervention programs, their presence could markedly improve the quality of evaluation research.

able conclusion that a number of programs (most notably Upward Bound and College Bound) have been somewhat successful in increasing the numbers of economically disadvantaged youth graduating from high school and enrolling in college. The problem remains, however, of ascertaining why such findings occur. It is entirely possible that a self-selection artifact is operant here. Namely, success is to be found in the very selection of program participants and not in the program itself. As noted, the process of participant selection has rarely been one which results in a representative sampling of disadvantaged youth in the high school age bracket. It is likely, however, that both effects are present in evaluation outcomes; that beyond selection effects, the programs themselves are having some impact upon student behaviors.

But once more, one is faced with the complex problem of ascertaining why such effects occur and which of the variously applied treatments, singularly or in combination, are responsible for those effects. Past evaluations have been, for instance, quite mixed regarding the impact of intervention upon formal cognitive outcomes such as measured by I.Q. scores and achievement tests. For the most part, one suspects that the success of certain programs in increasing school completion lies less in increasing formal learnings than it does in the motivational and expectational learnings which occur in program settings. But while testimonials are positive in this regard, the use of testimonials remains a highly suspect device in evaluation research. We simply do not know enough about the effect of intervention programs at the secondary school level on such informal learnings.

What does appear to be more secure is the observation that successful programs are frequently those which are functionally tied into a particular high educational institution. In those instances where colleges have had some form of meaningful affiliation with the high school and/or with its students, the programs appeared to be more successful in both retaining students until high school completion and in promoting them to some form of higher education. Not surprisingly, it has been to the affiliated college that most program students have

gone. The need for institutions to be functionally committed to the success of intervention programs again seems apparent.

Higher educational intervention programs. Higher educational intervention programs have also been shown to have some positive impact upon program participants. Specifically, they appear to have been somewhat effective in decreasing dropout rates and increasing retention rates among disadvantaged youth. But while academic achievement of program participants appears to have been heightened, in some instances, their academic attainments remain below institutional averages for regularly admitted students.

But as in evaluations of secondary intervention programs, evaluations of higher educational intervention programs have not permitted the disentanglement of the independent effects of various treatments, settings, and sequences of treatments upon program participants. Thus, we are unable to say why retention rates increase or why academic attainments appear to show some gains relative to other disadvantaged youth not participating in such programs. While it is unavoidable that these programs have had some effect, it is entirely possible for self-selection to intervene in program outcomes. It is undeniable that college-level programs have tended to "take the cream off the top of the barrel." What such programs would accomplish with a more representative population of high school graduates from disadvantaged backgrounds remains an unanswered question. In any event, that these programs appear to assist some persons seems to be a reliable finding.

But even here, the self-fulfilling prophesy could help explain program impacts. Namely, that programs tend to be successful when institutions want them to be so. In this respect, Davis' (1973) study of Special Service Programs is most intriguing. As noted earlier, the more effective programs appeared to be those which were more functionally integrated into the academic and social mainstream of the institutions in which they were housed. Marginal programs, which tended to place program participants outside institutional life, were also those which appeared to be less successful in retaining and promoting students from disadvantaged backgrounds. This was so

despite the apparent similarity in treatments applied to the target populations. As suggested in secondary education programs, the need for institutional commitment is again apparent.[1]

In this respect, there is little evidence of colleges rushing to pick up the financial costs of running Special Service Programs on a wider basis. Whether this reflects a lack of genuine support by institutions for the goals of these programs or simply the low priority assigned to these programs relative to other institutional needs is unanswerable. Nevertheless, such behaviors may be an important indication of the source of the failure of these programs to show more positive overall results.

All this leads us to suspect that one of the main constraints to greater program effectiveness lies within the very fabric of the schools and colleges within which those programs are housed. Specifically, they may lie in the values and attitudes of faculty, administrators, students, and parents concerning the aiding of disadvantaged youth in education and in the institutional structures and organizational frameworks which reflect those values. Programs which neglect this aspect of program functioning may limit their ability to assist program students. Suggested therefore is a need for programs to supplement their provision of additional educational inputs with policies designed to alter the perceptions of teachers and administrators regarding the disadvantaged youth in education.

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[1] In this regard, findings concerning the positive relationship between an individual's commitment to the goal of college completion and the likelihood of his actually finishing that degree program are indeed revealing (Tinto and Cullen, 1973).

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