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Early Training Project

The Early Training Project, which operated in Abbotfield, Tennessee from 1962 to 1965, was a modest intervention aimed at preschoolers. It was designed to offset “the progressive retardation observed in poor children as they progress through school.”¹ The program’s objective was to help these children prepare for school by offsetting the effects of being born into poverty. It provided “special experiences” in the two and one-half years before first grade, including a part-day preschool program during the summer and weekly home visits during the school year.

Susan Gray, Barbara Ramsey, and Rupert Klaus, researchers at Vanderbilt University (the “Vanderbilt team”), evaluated the Early Training Project using random assignment during the course of the program and then periodically following-up on the children until age twenty-one. They found that the program produced early gains on various cognitive measures, but few statistically significant effects remained by the time the participants had turned twenty-one. Although the project was evaluated using random assignment and there was relatively little attrition, the very small initial sample (sixty-three children) seriously limited the statistical power of the evaluation. Thus, it is unclear whether the small effects are due to the weakness of the intervention or the limited statistical power of the analysis. The program was also included in the Consortium Study (see chapter 4), which statistically combined findings from selected early childhood education programs that had conducted long-term follow-ups.

Program Design

Program group. The Early Training Project enrolled four- to five-year-old black children from very low-income families. Children were recruited for the program based on several criteria: the mother had not completed high school; the head of household was unemployed or in an unskilled/semi-skilled occupation; and the family lived in poor housing conditions. Ninety-five percent of eligible families agreed to participate.

At the time of enrollment, mothers tended to be in their late twenties, had less than a ninth grade education, and about half were employed, typically in unskilled jobs. Gray, Ramsey, and Klaus observe: “It is not surprising that these mothers, beset as they were by the struggles of bare subsistence living, had not done more in the way of providing desirable educational

¹Susan W. Gray, Barbara K. Ramsey, and Rupert A. Klaus, *From 3 to 20: The Early Training Project* (Baltimore: University Park Press, 1982), 14.

experiences for their young children.”²

Services. The Early Training Project consisted of a ten-week, part-day preschool program during the summer for up to three summers (through six years of age) for four hours per day, five days per week. There were about twenty children per class, with one teacher and four assistant teachers. The focus of the sessions was on improving future school performance by encouraging the development of “achievement aptitudes” and “achievement attitudes.” The components of each category were defined as necessary for success in school. In the “achievement aptitudes” category, perceptual development, the acquisition of basic concepts, and language development were emphasized. In the “achievement attitudes” category, emphasis was placed on achievement motivation, persistence, delay of gratification, and identification of an achieving role model.³ The summer sessions were supplemented with weekly home visits during the school year, because of concerns of “possible, indeed probable, regression over the 9 months in which the children spent all of their time once more in the home settings, which we believed had been inadequately stimulating in the past.”⁴ These visits lasted about an hour and were intended to sustain the educational gains made over the summer. In order to do so, mothers were taught to use everyday items in their homes to provide their children with educational experiences. The home visitors also provided the mothers with support by informing them of relevant community resources.

The Evaluation. Susan Gray,⁵ Barbara Ramsey, and Rupert Klaus, of the George Peabody College for Teachers at Vanderbilt University, were the principal investigators for the Early Training Project. They randomly assigned sixty-three children to either a program group (forty-two children) or to a control group (twenty-one children). There were originally two program groups: one consisting of children who started the program about two years prior to school entry and a second consisting of children who entered the program a year later. These groups were combined because Gray, Ramsey, and Klaus found no significant differences between them. The Vanderbilt team carried out periodic follow-up until the children were age twenty-one.

Major Findings

²Gray, Ramsey, and Klaus, 1982, 90.

³Gray, Ramsey, and Klaus, 1982, 113–114.

⁴Gray, Ramsey, and Klaus, 1982, 109.

⁵Sargent Shriver credited Susan Gray’s research on the early education of “disadvantaged” children with laying the groundwork for the development of Head Start: “Dr. Gray’s pioneering experiments showed us what could be accomplished and how to go about it. Through Head Start and through the even more massive programs for child development which have flowed from the Head Start experiment, Susan Gray has made an enduring contribution to the nation’s welfare.” See “Susan Gray,” <http://www.vanderbilt.edu/kennedy/sgs/graybio.html> (accessed December 22, 2002).

The Early Training Project produced early gains on various cognitive measures, but these gains faded out shortly after the children entered school. By the time the participants turned twenty-one, there were few statistically significant effects on various school performance measures, economic outcomes, and nonmarital childbearing.⁶

Cognitive. The evaluation included findings for both IQ and achievement scores.

IQ. The project produced early gains in IQ, reaching 12 points by age six, but after this point, these gains were no longer statistically significant (see table 1).

Achievement. There were also initial gains in achievement test scores at the end of first grade, when the program children scored higher on three of four subtests of the Metropolitan Achievement Tests. These gains faded by the fourth grade, at which point the differences were no longer statistically significant. Subsequent follow-up through high school revealed no significant differences on a range of test scores. The Vanderbilt team attributed these negligible effects to “the small amount of input from the intervention program relative to the massive effects over 10 years of surroundings in which the children lived.”⁷

Table 1. Early Training Project: IQ Effects

Age (years)	IQ scores for:		
	Program group	Control group	Difference (percentage point)
Pre-test	89	86	—
5	96	87	9
6	95	83	12
7	98	91	—
8	94	88	—

⁶Gray, Ramsey, and Klaus, 1982.

⁷Gray, Ramsey, and Klaus, 1982, 254.

10	88	85	—
17	79	76	—

Source: Irving Lazar and Richard Darlington, "Lasting Effects of Early Education: A Report from the Consortium for Longitudinal Studies," *Monographs of the Society for Research in Child Development* 47 (1982), 45.

Notes: Only significant differences are reported. "—" indicates difference is not statistically significant at the 5 percent level. Tests included Stanford-Binet and Wechsler Scale for Children (WISC).

School readiness/performance. There were no statistically significant impacts on grade retention, achievement test scores, or high school graduation, but the Vanderbilt team reported a large reduction in special education placements by age eighteen (3 percent vs. 29 percent). In an assessment of preschool intervention programs, however, Herman Spitz, former director of the Research Department at the E.R. Johnstone Training and Research Center in Bordentown, New Jersey, cautioned that this finding is somewhat misleading because the placements were for a very short period of time.⁸

There were large differences in high school graduation for females that *approached* statistical significance ($p = .13$), with 75 percent of the girls in the program graduating by age nineteen, compared to 20 percent of those in the control group. By age twenty-one, however, these differences had narrowed (85 percent vs. 50 percent) and no longer approached statistical significance. Girls also showed a statistically significant reduction in placements in special education for the educable mentally retarded (0 percent vs. 30 percent). The favorable school performance impacts for girls were also found in the High/Scope Perry Preschool Project (see chapter 14) and the Syracuse Family Development Research Program (see chapter 23).

For males, the findings were mixed. Only placement in special education *approached* statistical significance (9 percent vs. 36 percent). In terms of high school graduation and grade retention, the males in the program group actually had poorer outcomes at age nineteen, although these were not statistically significant. (By age twenty-one, high school graduation rates among males were virtually identical.)

The findings on educational performance by sex parallel those found in the High Scope/Perry Preschool Project (see chapter 14). The Vanderbilt team suggested that one reason may have been that it is "easier, because of socialization and school practices, to arouse motivation to achieve in school-type activities among small girls than small boys."⁹

Socioemotional development. Relevant tests apparently not administered or results not

⁸Herman H. Spitz, *The Raising of Intelligence: A Selected History of Attempts to Raise Retarded Intelligence* (Hillsdale, NJ: Erlbaum, 1986), 97.

⁹Gray, Ramsey, and Klaus, 1982, 55.

reported.

Health. Data apparently either not collected or not reported.

Behavior. Data apparently either not collected or not reported.

Crime/delinquency. Data apparently either not collected or not reported.

Early/nonmarital births. At age twenty-one, there were no statistically significant impacts on childbearing or marriage. For young women, there were no statistically significant differences in teen pregnancy, although among those who became pregnant, women in the program were more likely to graduate from high school.

Economic outcomes. At age twenty-one, there were no statistically significant differences in employment, wage rates, or welfare receipt for former Early Training Project participants.

Effects on parents. Data apparently either not collected or not reported.

Benefit-cost findings. Apparently a benefit-cost analysis was not performed.

Overall Assessment

Although the project was evaluated using random assignment and there was relatively little attrition, the very small initial sample (sixty-three children) seriously limits the statistical power of the evaluation. Thus, it is unclear whether the limited effects are due to the weakness of the intervention or the limited power of the analysis.

Program theory. Apparently, there is no specific theory detailed beside the general expectation that early intervention programs promote school readiness and improve developmental outcomes for children.

Program implementation. No implementation problems were reported.

Assessing the randomization. The Vanderbilt team does not describe the random assignment process they used, but no significant problems were reported. The baseline characteristics of the program and control groups were similar. The only statistically significant difference in twenty characteristics examined was the mean age of the female caregiver (29.6

years vs. 25.6 years).¹⁰ This is what would be expected by chance. Although the differences on some other characteristics appeared to be fairly large, none were statistically significant. This is not surprising given the very small sample size, because a relatively large difference would be needed to reach statistical significance.

Assessing statistical controls in experimental and nonexperimental evaluations. The Early Training Project was evaluated using random assignment, so selection bias should not have posed a serious problem. It appears that no supplementary statistical controls were used.

Sample size. Because the total sample was very small and most of the analysis was conducted separately for male and female participants, the sample for most analyses started at about thirty children. With such a small sample, large impacts are needed for statistically significant findings. Thus, the absence of impacts in some areas does not mean that the program did not affect some outcomes, only that the impacts may have been too small to be detected. A small sample also means that differences in baseline characteristics would also have to be very large to be statistically significant, making it more difficult to assess the comparability of the program and control groups. The Vanderbilt team themselves caution that “findings that [would] seem decisive with a larger sample must be viewed with some caution, even though the tests of statistical significance have been relatively conservative.”¹¹

Attrition. Despite the long follow-up period of about seventeen years, attrition was low, about 15 percent. The final report carefully documents attrition and the characteristics of those who left. It presents, for each relevant year, the baseline characteristics of the sample members included in the analysis and of those who left. No statistically significant differences were found between the program and control group, but any attrition with such a small sample would have created the potential for bias.

Data collection. The data collection relied on a wide range of tests, school records, and survey results. The data sources were appropriate for the questions being studied and were relatively complete.

Measurement issues. Standard IQ and achievement tests were administered by trained examiners at various ages. Data from school records were obtained for all but two children (one from the program and one from the control group).

Generalizability. The findings are limited to a sample of low-income black families in one Tennessee town. It is unclear how generalizable they are, even to other low-income black

¹⁰This age differential is partly explained by the fact that one of the caregivers in the program group was a grandmother. Otherwise, all caregivers were the mothers of the children.

¹¹Gray, Ramsey, and Klaus, 1982, 75.

families.

Replication. The project has apparently not been replicated.

Evaluator's description of findings. The Vanderbilt team concluded that the effects of the program were more enduring on school requirements indicators and not for test scores. The findings were significant only for females. Thus, they tentatively conclude that the program had only limited effects on females. In addition, they warn that as the Early Training Project was a forerunner of early childhood programs, students and parent may have felt additional pressure to succeed which would not be the case for later participants in early childhood programs. Thus, the results may be somewhat overstated.

Evaluator's independence. Gray, Klaus, and Ramsey, were also involved in creating the program.

Statistical significance/confidence intervals. Statistical significance was measured and reported at the 1 percent and 5 percent levels.

Effect sizes. Apparently effect sizes were either not calculated or reported.

Sustained effects. The evaluation examined impacts through age twenty-one, about sixteen years after the intervention ended.

Benefit-cost analysis. Apparently not performed.

Cost-effectiveness analysis. Apparently not performed.

Commentary

Editors' Note: For each evaluation included in this report, we attempted to contact the senior evaluators to offer them the opportunity to respond to our assessment. After searching for someone to respond to this assessment, however, it appears that no one associated with this evaluation is still alive.

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