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ABSTRACT

The High/Scope Perry Preschool study through age 27 found that high-quality, active learning preschool programs for impoverished African American children cut their crime rate in half, significantly affected their educational performance and level of schooling, increased their earnings and commitment to marriage, and returned $7.16 for every dollar invested. The High/Scope Perry program, however, affected males and females differently. This study reviews the design of the preschool study and summarizes its overall findings, examines the program's effects on males versus females, speculating on the implications of such findings, and considers the relevance of the preschool study to existing programs such as Head Start, stressing the importance of preschool program quality to obtaining long-term benefits. The most striking differences between male and female program participants occurred in education. For example, although males outscored females on some of the school abilities that they brought to school, females surpassed males in school achievement. The preschool program demonstrates what preschools for impoverished young African Americans can achieve if done correctly. Quality depends on the empowerment of children, parents, and teachers, but success in such programs as Head Start, which often uses elements of the High/Scope Perry curriculum, depends on full funding per child. (MSF)

WHAT THE HIGH/SCOPE PERRY PRESCHOOL STUDY REVEALS ABOUT DEVELOPMENTAL TRANSITIONS AND CONTEXTUAL CHALLENGES OF ETHNIC MALES[1]

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The High/Scope Perry Preschool study through age 27 recently found that high-quality, active learning preschool programs for young African American children living in poverty cut in half their crime rate through age 27, significantly increase their earnings, property wealth, and commitment to marriage as adults, and return $7.16 for every dollar invested. But the study has revealed not only these extraordinary long-term benefits, but also that male and female program participants experienced **different** long-term effects. In so doing, it gives us some fascinating insights into how young African American males and females grow up and when and how we can help them on their journeys to adulthood.

We will first briefly review the design of the study and its overall findings through age 27. Next we will examine the preschool program's effects on males versus its effects on females, speculating about the meaning and implications of these findings. Then we will consider the relevance of this study to existing programs such as Head Start and the central importance of preschool program quality to obtaining long-term benefits.

Design and Major Findings of the Study

To conduct the High/Scope Perry study, project staff (a) identified 123 young African-American children living in poverty and at risk of school failure; (b) randomly assigned 58 of them to a program group and 65 of them to a no-program group; (c) provided the program group at ages 3 and 4 with a high-quality, active learning program; (d) collected data on both groups annually from ages 3 through 11 and at ages 14, 15, 19, and 27, with very little attrition (for example, 95% of the study participants were interviewed at age 27); and (e) after each phase of data collection, analyzed the data and wrote reports of the study.

As shown in Figure 1, the High/Scope Perry study through age 27 has found that high-quality, active learning programs for young children living in poverty provide them

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[1]Presented at the annual conference of the American Psychological Association, Toronto, August 20, 1993. For the full report of the study reported herein, see L. J. Schweinhart, H. V. Barnes, & D. P. Weikart, *Significant Benefits: The High/Scope Perry Preschool Study Through Age 27*, available from the High/Scope Press, 600 N. River Street, Ypsilanti, MI 48198, phone (313) 485-2000.

with statistically significant[2] benefits through age 27 in educational performance, crime prevention, and economic status (Schweinhart, Barnes, & Weikart, 1993).

Educational performance. By age 27 the program group completed a significantly higher level of schooling than did the no-program group (averages of 11.9 years vs. 11.0 years); 71% of the program group, but only 54% of the no-program group, graduated from regular or adult high school or received General Education Development certification. This effect on the high school graduation rate is important because it is a gateway to other long-term effects and because it has been corroborated in three other studies of preschool-program effects (Fuerst & Fuerst, 1993; Gotts, 1989; Monroe & McDonald, 1981). Previous findings for educational performance indicated that the program group spent fewer than half as many years in programs for educable mental impairment as the no-program group (group means of 1.1 years vs. 2.8 years) and scored significantly higher on tests of educational performance at ages 4-7, 14, 19, and 27.

Crime prevention. Police and court records showed that program group members averaged 2.3 arrests, half as many as the 4.6 arrests averaged by no-program group members. Only 7% of the program group had been arrested five or more times, significantly fewer than the 35% of the no-program group. Only 7% of the program group had ever been arrested for drug dealing, significantly fewer than the 25% of the no-program group. Program-group members spent significantly less time on probation than did no-program group members (12% vs. 26% ever on probation). Similarly, in the Syracuse University Family Development Research Program (Lally, Mangione, & Honig, 1988), significantly fewer program group than no-program group members had been placed on probation for delinquent offenses as teens (6% vs. 22%).

Economic status. At age 27, 29% of the program group reported monthly earnings of $2,000 or more, significantly more than the 7% of the no-program group who reported such earnings. Significantly more of the program group than the no-program group owned their own homes (36% vs. 13%) and owned second cars (30% vs. 13%). According to social services records and interviews at age 27, significantly fewer program group members than no-program group members received welfare assistance or other social services as adults (59% vs. 80%).

Return on investment. A benefit-cost analysis, conducted by W. Steven Barnett of Rutgers University, involved the estimation of the monetary value of the program and its effects, in constant 1992 dollars discounted annually at 3%. Although the analysis included economic benefits to program participants, only the economic benefits to the public, as

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[2]This paper designates a group difference as **significant** if it has a two-tailed probability of less than .05; as **nearly significant** if it has a two-tailed probability between .05 and .10; and as **noticeable** if it has a two-tailed probability between .100 and .250. Since the hypotheses of this study are clearly directional, readers who prefer one-tailed tests of significance may do so by interpreting "nearly significant" findings as **significant**.

taxpayers and as potential crime victims, are presented here. The average annual cost of the program was $7,252 per participant; 45 of the program participants attended for two years and 13 attended for one year. Thus, the discounted, weighted average cost of the program was $12,356 per participant. The average amount of economic benefits was $88,433 per participant, from the following sources: (a) $6,287 saved on schooling, due primarily to reduced need for special education services, and despite increased college costs for preschool-program participants; (b) $8,847 in higher taxes paid by preschool-program participants because they had higher earnings; (c) $2,918 saved on welfare assistance; (d) $12,796 saved by the criminal justice system; and (e) $57,585 saved by potential crime victims, based on in-court and out-of-court settlements for such crimes. The $88,433 in benefits divided by the $12,356 in cost per participant results in a benefit-cost ratio of $7.16 returned to the public for every dollar invested in the High/Scope Perry program. Thus, the program was an extremely good economic investment, better than most alternative public uses of society's resources, better even than most private-sector investments.

Preschool-Experience-by-Gender Interactions

Now let's consider the preschool-experience-by-gender interactions, the outcomes for which the program effect was significant for males but not for females or for females but not for males. Both situations occured, so it's not a question of the program helping only females or only males. The program helped females in some ways and males in other ways.

Although gender subgroups were not intentionally balanced on background variables, statistical analyses have revealed no extra significant differences on background variables between program males and no-program males or between program females and no-program females, nor have gender subgroup differences on background characteristics had much effect on the analyses of outcome variables (Schweinhart et al., 1993). It should be noted that because the numbers of males or females was obviously smaller than the total number of study participants, a preschool-experience-by-gender difference had to be larger to attain the same degree of statistical significance as a preschool-experience difference.

As shown in Table 1, preschool-program effects appear to usually be stronger for females in educational performance and marital status and for males in crime prevention and economic status. Findings for educational performance are presented after the other findings below, because of their more extensive analysis.

Crime prevention. Program males were arrested significantly less often than no-program males (means of 3.8 vs. 6.1 arrests). Only 12% of the program males had been arrested five or more times, as compared to 49% of the no-program males, one fourth as many. Program females were arrested nearly significantly less often than no-program females (means of 0.4 vs. 2.3 arrests). None of the program females had been arrested five or more times, as compared to 16% of the no-program females.

Economic status. Although there was no preschool-experience-by-gender interaction effect on monthly earnings at age 27, preschool experience and gender both had main effects on monthly earnings at age 27. Program males earned significantly more than no-program males (means of $1,368 vs. $830; 42% vs. 6% earning over $2,000). This male earnings difference came from better-paying jobs, because program and no-program males had similar employment rates (63% vs. 62%). Program females earned significantly more than no-program females (means of $1,047 vs. $651; 48% vs. 18% earning over $1,000). The female earnings difference came from a higher employment rate: 80% of program females but only 55% of no-program females were employed at the time of the age-27 interview. Significantly more program than no-program males owned their own homes (52% vs. 21%); noticeably more program than no-program females owned their own homes (16% vs. 0%).

Significantly fewer program than no-program males received any social services in the previous ten years (52% vs. 77%); noticeably fewer program than no-program females received any social services in the previous ten years (68% vs. 85%). However this pattern was reversed at the time of the age-27 interview: Program and no-program males did not noticeably differ in reporting receiving money from the government, especially Aid to Families of Dependent Children (AFDC) or Food Stamps. But nearly significantly fewer program than no-program females reported receiving money from the government (24% vs. 59%), nearly significantly fewer reported receiving AFDC (17% vs. 41%; and significantly more reported receiving Food Stamps (21% vs. 50%).

Commitment to marriage. Although the same percentages of program and no-program males were married (26%), the married program males were married an average of 6.2 years, but the married no-program males were married an average of only 3.3 years; 40% of program females, but only 8% of no-program females, were married at age 27. While 57% of the births to program females were out-of-wedlock, significantly more, 83%, of the births to no-program females were out-of-wedlock.

Educational performance. In comparison with no-program females, program females completed a significantly higher level of schooling (means of 12.2 vs. 10.5 years) and had a significantly higher rate of high school graduation or the equivalent (84% vs. 35%)—a 49-percentage-point difference, five out of six as compared to two out of six. Program and no-program males did not noticeably differ on either highest years of schooling (11.6 vs. 11.4) or high school graduation or the equivalent (61% vs. 67%). For African Americans in general, the rates of high school graduation or the equivalent in recent years were 76% for males and 83% for females (Fine & Zane, 1989).

Special school placements—defined as placements in programs for educable mental impairment or retention in grade—appear to account for about one-third of the graduation rate difference between program and no-program females, but have little effect on the graduation rates of program versus no-program males. As shown in Table 1, program females had significantly fewer such placements than did no-program females (29% vs. 55%), while program and no-program males did not noticeably differ on such placements (53% vs. 50%). High school graduates included only 26% of the specially placed females

(including only 17% of the no-program females who were specially placed), but 85% of the females who were not specially placed (including all 17 of the program females who were not specially placed). For males, high school graduates included 37% of those specially placed and 63% of those not specially placed. So such placements were a strong predictor of whether or not females (and males, to a lesser extent) would graduate from high school. Note that these placements signal both the identification of school problems and attempts to remedy these problems.

A similar pattern was found for parents' hopes for college degrees for their 15-year-old children: only a just-noticeable difference between program and no-program males (50% vs. 38%) as compared to a significant difference between program and no-program females (63% vs. 33%).

No significant preschool-experience-by-gender interaction effect was found for any of the intelligence, language, achievement, or literacy test scores obtained from the preschool years to age 27. This lack of significant interactions presents a strong argument that the preschool program did not affect the tested educational performance of females much more than males, even if it did affect females' school placement and highest year of schooling more than males'. Regardless of their preschool experience, males significantly outscored females on several intellectual and language tests—in vocabulary after two years of the preschool program and at ages 7, 8, and 9; in psycholinguistic abilities at ages 8 and 9; and in intellectual performance at age 14. However, females significantly outscored males on school achievement tests at age 8 and on certain subtests of a literacy test at ages 19 and 27. In other words, these males significantly surpassed these females in some of the school abilities that they brought to school, but scored the same as or significantly worse than the females on the school achievement that they gained from their school experience.

While teen parenthood had a lot to do with whether or not study participants graduated from high school, it was not a mediator of the preschool-program effect on high school graduation. Only 44% of the teen father graduated from high school, as compared to 70% of the males who were not teen fathers. Only 40% of the teen mothers graduated, as compared to 79% of the females who were not teen mothers. However, program males did not differ noticeably from no-program males in their rates of teen fatherhood (18% vs. 26%), nor did program females differ noticeably from no-program females in their rates of teen motherhood (44% vs. 54%).

Nonetheless, teen motherhood illustrates a striking difference between program and no-program females. Significantly more program females who became teen mothers graduated from high school (or the equivalent) than did no-program females who became teen mothers (70% vs. 15%). This extraordinary difference provides evidence of strong commitment to schooling that is more compelling than a difference of similar magnitude found on some attitudinal scale. Teen motherhood is a substantial obstacle to graduating from high school. The entire pattern of preschool-experience-by-gender findings on schooling variables suggests that females benefitted more than males from the effects of the preschool program on subsequent elementary and secondary school experience.

One interpretation of this pattern is that the preschool program's improvement of males' school ability was not noticed or responded to by school staff. Given the opposite pattern for arrests, perhaps the attention of school staff focused instead on males' acceptable versus unacceptable conduct. Meanwhile, by this interpretation, the preschool program's improvement of females' school ability was sustained and amplified by the attention of school staff to this improvement, particularly by tracking females according to their school ability—keeping higher-ability females in the upper track of regular classes on grade while placing lower-ability females in the lower track of special classes or grade retention. Subsequently, females in the upper track developed higher school achievement and commitment to schooling than the females in the lower track. Then, when teen motherhood stood in the way of high school graduation for some females, most of those in the upper track, because of their stronger commitment to schooling, graduated anyway, while most of those in the lower track did not. Gray, Ramsey, and Klaus (1982), in their study of the Early Training Project, reported a similar pattern of educational-performance findings for males and females.

The program helped females in some ways and males in other ways. This simple conclusion is very important because some people have been afraid that young African American males born in poverty cannot be helped. This study says otherwise. It says that high-quality preschool programs—which provide prevention rather than remediation—will help them quite a bit.

Relevance to Existing Programs

The High/Scope Perry Preschool study shows what programs for young children living in poverty can achieve **if they are done right.** The High/Scope Perry program was developed as a model program of early childhood education with substantial outreach to parents, meant to be emulated and adapted in the context of local circumstances. Head Start and similar programs are, by and large, service programs for young children living in poverty, including not only outreach to parents, but also meals and health care for children and social services for families. According to a national survey of High/Scope trainers, one-fourth of the nation's Head Start programs use some or all elements of the High/Scope Curriculum that was developed and used in the Perry program (Epstein, 1993).

A year of the High/Scope Perry program cost $7,252 per child, in 1992 dollars. But this model program was an experimental prototype, not designed for cost efficiency. Run as a service program, it could have been just as effective with 8 children per teacher rather than the 5-6 that it had. Adding in about $500 per child for meals, health care, and social services, the cost would be $5,500 per child. A year in Head Start in 1992 cost $4,100 per child. Run at the recommended level of quality, it too would cost $5,500 per child, with full-day Head Start programs costing somewhat more per child. Increases in Head Start funding per child to enhance program quality should go to systematic inservice curriculum training, curriculum supervision, observational assessment of programs and children, and higher staff salaries and benefits. State and local agencies that do not spend as much per

child are probably doing so not because of any greater efficiency, but because they have sacrificed program elements that are crucial to the quality and effectiveness of the program and its economic return on investment.

Since President Clinton was elected, there has been much talk in Congress and the rest of the country of full funding for Head Start. Despite increased funding of such programs in recent years, only 58% of preschoolers (aged 3 to kindergarten entry) with household incomes under $10,000 attend any type of preschool program, as compared to 79% of preschoolers with household incomes over $30,000 (West, Hausken, & Collins, 1993). But full funding must also mean the full funding per child that is necessary to insure program quality.

Program Quality: The Key to Significant Benefits

The High/Scope Perry Preschool study and similar studies suggest that high-quality programs for young children produce significant long-term benefits because they:

- **empower children**, *by encouraging them to initiate and carry out their own learning activities*
- **empower parents**, *by involving them as full partners with teachers in supporting their children's development*
- **empower teachers**, *by providing them with systematic inservice curriculum training and supportive curriculum supervision*

Empowering children. The National Association for the Education of Young Children has defined standards for developmentally appropriate practice that form a basis for program quality (Bredekamp, 1987). Central to this definition is the idea that young children are active learners who can initiate their own learning activities and function as active learners rather than mere passive recipients of information. Such active learning empowers children to assume some control over their environment and to develop a sense of control over their lives, even as they are learning how to solve their everyday intellectual, social, and physical problems. Erikson (1950) pointed out that preschoolers are developing a sense of initiative, responsibility, and independence. But they do so as byproducts of their active learning experiences, not by memorizing self-esteem slogans that are not grounded in their actual social experience. In the High/Scope Curriculum (Hohmann, Banet, & Weikart, 1979; Hohmann & Weikart, in press) developed during the High/Scope Perry program, children plan their own learning activities, carry them out in a materials-rich environment, and report on them afterwards. This plan-do-review process helped children in the Perry program develop their abilities and sense of control over their environment. Through home visits, the parents too came to see their children as active learners.

Empowering parents. The High/Scope Perry Preschool program included weekly home visits by the teachers to the parents, as well as regularly scheduled group meetings. Each home visit lasted about an hour and a half and involved the child as well as the parent in discussion and modeling of the child's activities in the classroom. The initial goal each year was to establish rapport with parents new to the program. Rather than trying to meet all the family's needs, the home visitor's focus was on the child and the parent-child relationship. The parents came to see their children as active learners who were quite capable of learning. The parent component of the program empowered the parents to support their children's development of a sense of control and of intellectual, social, and physical abilities.

Empowering teachers. In order for teachers to engage in the practices that empower children and parents, they need to be empowered themselves through systematic inservice curriculum training and supportive curriculum supervision. Such training and supervision were key elements of the High/Scope Perry program. Subsequently, the national High/Scope Training of Trainers evaluation (Epstein, 1993) has indicated that such training and supervision in the High/Scope Curriculum could significantly improve the effectiveness of early childhood programs that had already achieved a high degree of quality in other ways. The evaluation found that systematic inservice curriculum training is most successful in promoting program quality when an agency has a supportive administration that includes a trained curriculum specialist on staff who provides teachers with hands-on workshops, observation and feedback, and follow-up sessions. Effective trainers focus on a coherent, validated, developmentally appropriate curriculum model, such as the High/Scope Curriculum. The evaluation found that each certified High/Scope trainer worked with an average of 25 teachers and assistant teachers in 13 classrooms; and that the teachers they trained scored significantly better than comparable teachers without such training, not only in their understanding of the High/Scope Curriculum, but also in their actual implementation of the approach. The evaluation also found that children in the High/Scope classrooms scored significantly higher than children in comparison classrooms in initiative, social relations, music and movement, and overall development.

Only Part of the Solution

As much as these High/Scope Perry Preschool study findings support the potential of early childhood programs to improve quality of life and reduce social costs, such programs are only part of the solution. To address the problems of crime, drug abuse, poverty, welfare dependence, and unemployment, the nation must also employ a range of other social-policy strategies. Affordable housing, universal access to health care, effective job-training programs, reduction of institutional racism, and improved educational opportunities at all levels are essential. But among these many efforts to improve the nation's quality of life, high-quality, active learning early childhood programs—and the teachers who provide them—should hold a central and respected position.

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Table 1

Preschool-Experience-by-Gender Interaction Effects

	Males		Females	
Variable	Program (n=33)	No-Program (n=39)	Program (n=25)	No-Program (n=26)
High school graduation (or equivalent)	61%	67%	84%	35%*
In EMI program or retained in grade	53%	50%	29%	55%*
5 or more arrests	12%	49%*	0%	16%
$2,000+ monthly earnings	42%	6%*	16%	9%
Employed at age 27	63%	62%	80%	55%
Own home at age 27	52%	21%*	16%	0%
Social services in past 10 years	52%	77%*	68%	85%
Food Stamps at age 27	15%	23%	21%	50%*
Married at 27	26%	26%	40%	8%*

*The same-sex comparison is statistically significant by chi-square analysis at $p<.05$, two-tailed.

Figure 1

High/Scope Perry Preschool Project: Major Findings at Age 27