

**WHAT IMPACTS DOES PRESCHOOL EDUCATION HAVE ON PERSONAL RESPONSIBILITY
AND RELATED SOCIAL BEHAVIOR?**

BY KAREN SCHULMAN AND W. STEVEN BARNETT

Research has found that quality preschool education programs have multiple positive impacts on children's development with consequences for a lifetime. While it is well known that such programs can improve children's school success, the full range of lifetime benefits has not received the same attention. This brief summarizes key discoveries regarding the benefits from preschool participation, with particular attention to important life choices that have moral dimensions.

Well-planned and adequately funded preschool education programs have been found to influence attitudes and behaviors with respect to school, family, work, and community. These benefits occur not just during the early years of life, but persist into adulthood. Studies of the Perry Preschool Project, the Abecedarian Project, the Chicago Child-Parent Centers, Head Start, and other early education programs have found greater commitment to education, lower rates of involvement with crime, greater likelihood of delaying parenthood, better health behavior, and higher rates of civic participation among children who have attended the programs.

There are multiple pathways through which preschool programs may produce these outcomes, including direct and indirect effects on children and their parents.¹ The strongest effects are likely to be produced by educational practices that directly influence children's dispositions, attitudes, thinking, and knowledge across all the developmental domains.² Preschool teaching practices can address cognitive, social, and emotional development simultaneously and these domains are intertwined and interactive.³ There is no need to sacrifice academic knowledge and skills to turn out more responsible and better-behaved children. However, it is possible to emphasize one or another aspect of learning and development while neglecting others with negative consequences for children's development.⁴

The potential for preschool education to deeply influence life choices and outcomes that our society deeply cares about contrasts sharply with the resources committed to provide quality preschool education. The federal government's primary avenue for investing in preschool education is Head Start, a comprehensive child development program with an annual budget of nearly \$7 billion. A recent study found that Head Start has some small positive effects on children's learning and development, but that these effects are relatively limited.⁵ From other studies, it is clear that Head Start could have greater benefits, but this will require funds for increased teacher quality and other improvements. Head Start teachers are paid only half what public school teachers receive, and, accordingly, Head Start teachers have relatively low levels of formal education. The results are weak outcomes for children and families. State government investments in preschool education differ tremendously from state to state, but in the aggregate amount to less than \$3 billion per year.⁶ Child care assistance is only available to a fraction of the low-income families who need help paying for care. Without assistance, many families are not able to afford high quality child care. In addition,

licensing standards for child care programs, which are primarily set at the state level, attend little to child development and the results are correspondingly poor.⁷ Without the resources to support high quality, Head Start, state preschool and child care programs will not be able to produce the meaningful impacts on children that research has shown to be possible.

Studies on the Impact of Preschool Programs: Background

High quality preschool programs aim to promote children's successful cognitive, social, emotional, and physical development.⁸ The question remains of whether these translate into long-term impacts on the lives of children as they pass through school and become adults. The writer of Proverbs 22:6 wrote: "Train a child in the way he should go, and when he is old he will not turn from it." To what extent does the research on preschool education agree?

This question of long-term impacts is addressed by seven studies that provide key evidence on the effects of preschool programs and how these effects play out over the course of participants' lives. The studies and programs examined share certain similarities, but they also differ. These variations in study design, preschool program characteristics, the children served by the program, and community settings influenced the results. Four of these studies are particularly valuable because they are true randomized trials, increasing confidence that outcomes really are the result of the program studied rather than other factors.

The Perry Preschool Study is a longitudinal follow-up of a randomized trial involving 123 low-income children. About half were randomly assigned to a high quality preschool program at ages 3 and 4 and about half to a control group that did not participate in the preschool program.⁹ The program consisted of half-day classes held five days a week and weekly home visits. The teachers had bachelor's degrees and certification and the child-teacher ratios were 1 to 6 or 7. The curriculum used a participatory education model that emphasized self-initiated learning by children as well as direct instruction. The study has followed children who participated through age 40.

The Abecedarian Study is a randomized trial with longitudinal follow-up of 104 at-risk children through age 21 (111 were in the original sample, 104 in the follow-up). Half were assigned to the program group and the other half to the control group.¹⁰ The typical family in the study was poor and headed by a young single mother without a high school degree. Children who were in the program group received an intensive intervention starting in early infancy. The program used a child-centered, individualized approach and emphasized development of cognitive, language, and behavior skills. The program operated on a full-day schedule and services were provided in a child care setting. Families in both the program and control groups received supportive social services.

The Chicago Longitudinal Study was a quasi-experimental study that compared 989 children who completed preschool and kindergarten in the Child-Parent Centers operated by Chicago Public Schools and 550 children in similar neighborhoods who did not attend

the preschool program but did participate in a full-day kindergarten program.¹¹ The preschool and comparison groups were of comparable socioeconomic backgrounds. The preschool program offered a structured set of educational activities emphasizing reading and math skills, parent participation opportunities and parent support. The staff-child ratio was 2 to 17 and teachers were all required to have bachelor's degrees and certification in early education, were relatively well-paid, and had regular staff development activities.

The Mauritius Early Environmental Enrichment Program Study compared a group of 83 children ages 3 to 5 who attended the enrichment program with a similar group of 355 children who attended a standard preschool program.¹² The enrichment program had a strong nutritional component and a teacher-child ratio of 1 to 5.5. The standard preschool program did not have a focus on nutrition and had teacher-child ratios of 1 to 30.

The Consortium for Longitudinal Studies involved a pooled analysis of multiple early intervention studies (including the Perry Preschool Project).¹³ All of the studies had been completed prior to 1969 and involved at least 100 participants. Some of the studies were randomized trials, while others were quasi-experimental. The preschool programs varied across studies, but all focused on serving low-income families and each had a specific curriculum.

A 2000 study of the federal Head Start program looked at 622 22-year-olds who had been born into poverty and compared those who had attended Head Start—a comprehensive early education program for preschoolers with incomes below poverty—to those who had not.¹⁴ This study did not have a randomized control group, but used statistical adjustments to account for differences between the two groups. This study also differed from the other studies in that it began with adults and worked backward to determine their preschool participation rather than following children from preschool forward.

The High/Scope Curriculum Study randomly assigned 68 children ages 3 and 4 with incomes below the poverty line to preschool programs with one of three curriculum models. The goal of the study was to compare the effects of the High/Scope curriculum to the effects of Direct Instruction and the traditional Nursery School model.¹⁵ Under the High/Scope model, teachers designed the classroom environment and daily routines in a way that encouraged children to be active learners. The Nursery School model emphasized children's self-initiated play in a less structured setting. The Direct Instruction model used a scripted, teacher-directed approach. It is noteworthy that in all three models the dominant mode was teacher-directed instruction, and that giving children choices and allowing them to follow their own interests did not mean choices were not restricted or that activities had no structure.

The Impacts of Preschool on Commitment to Education

Several of the studies found that participation in prekindergarten had an impact on children's school career. Children who participated in prekindergarten had better

attitudes toward school and were more likely to complete high school and go on to college.

The Perry Preschool study found a greater commitment to school among those who had participated in the preschool program, as reflected in their attitudes toward school and schoolwork in their teenage years:

- At age 15, the program group placed significantly greater importance on high school than the control group (adjusted means of 24.1 versus 22.7 on a 7-item scale with 4 points per item).
- At age 15, a significantly higher proportion of the program group than the control group reported that their schoolwork required preparation at home (68 percent versus 40 percent).
- Parents of children in the program group, when the children were age 15, were significantly more likely than parents of children in the control group to say that their children enjoyed talking about what they were doing in school (65 percent versus 33 percent), had done as well in school as they would have liked (51 percent versus 28 percent), and hoped that their children would get a college degree (55 percent versus 36 percent).
- At age 19, the program group expressed a significantly better attitude toward their high school experience than the control group (adjusted means of 22.0 versus 19.2 on a 16-item scale with 3 levels per item).

This greater commitment to school was accompanied by significantly higher rates of high school completion among those in the program group. By age 19, 67 percent of the program group had graduated from high school or received their GED, compared to 45 percent of the control group.

The Consortium for Longitudinal Studies also found preschool to have an impact on children's attitudes toward school and motivation levels. In 1976, when participants were between 10 and 19 years of age, children in the program group were significantly more likely than those in the control group to mention school or work achievements when asked to talk about something that made them proud of themselves. In the three Consortium studies where the participants had reached early adulthood (ages 19 to 22), by 1980, the preschool group had higher occupational aspirations than those who had not participated in preschool. In 1980, young people who had expressed pride in achievement-related accomplishments in 1976 were more likely to be employed, had completed more years of schooling, and had higher educational expectations. Data from the four Consortium studies for which an analysis was possible, indicated that preschool increased high school completion rates.

In the Abecedarian study, the preschool program increased the high school graduation rate at age 19 (67 percent versus 51 percent) and increased enrollment in higher

education. A significantly higher percentage of the program group was still in school at age 21 compared to the control group—42 percent versus 20 percent—and 36 percent of the program group had attended a four-year college, while only 14 percent of the control group were doing so.

Other studies offer further evidence of the positive impact of prekindergarten on educational achievement. The Chicago study found that 61 percent of the preschool group had completed high school as of age 21, versus 52 percent of the comparison group, a significant difference. The 2000 Head Start study found that while just 5 percent of female Head Start participants failed to receive a high school diploma or equivalent, 19 percent of females who had not participated failed to graduate high school.

The High/Scope study did not find any significant differences among the three groups exposed to different curricula in their school achievement or high school graduation rates. However, at age 23, the High/Scope group was about twice as likely as the Direct Instruction group to say that they planned to graduate from college (70 percent versus 36 percent).

The Impacts of Preschool on Employment

Preschool programs can affect participants' chances of having a job and the type of job they have when they reach adulthood. It is likely that these outcomes are related to participants' higher educational achievement levels, which improves their employment prospects. The positive outcomes may also reflect participants' higher motivation levels.

The Perry Preschool study found that a significantly higher proportion of the program participants than non-participants were employed at age 27 (69 percent versus 56 percent) and at age 40 (76 percent versus 62 percent). The study also found that at age 40, the median annual earnings of the program group was \$20,800, compared to \$15,300 for the control group.

While there was no significant difference between the overall employment rate of the program group and that of the control group for the Abecedarian study, program participants were significantly more likely to be engaged in skilled jobs at age 21.

Impacts of Preschool on Social Adjustment and Crime Reduction

Preschool participation has had significant impacts on behavior and later involvement in crime, according to a number of studies. Indications of better social adjustment among children who have attended preschool, which may be connected to the reduced tendency to commit crimes, appear at an early age.

The better behavior and social adjustment of Perry Preschool program participants was evident as early as elementary school. Reports from kindergarten through third grade teachers indicated that children who had attended the preschool program engaged in

personal and school misconduct significantly less frequently than the children in the control group.¹⁶

In the Perry Preschool study, baseline arrest rates for the control group were quite high and preschool participation substantially reduced those rates. The effects are evident in young adulthood and persist even into middle age.

- As of age 40, 83 percent of those in the control group had been arrested at least once, compared to 71 percent of the program group. This follows a pattern over a lifetime that was apparent as early as age 19 in arrests and self-reported delinquent behavior at age 15.¹⁷
- While 55 percent of the control group had been arrested five or more times as of age 40, this was the case for 36 percent of the program group.
- Over their lifetimes, 52 percent of the control group was sentenced to time in prison or jail, compared to 28 percent of the program group.
- Those who had not participated in the program were more likely than participants to have been arrested for one or more violent crimes (48 percent versus 32 percent), property crimes (58 percent versus 36 percent), or drug crimes (34 percent versus 14 percent) by age 40.

The study of the Chicago Child-Parent Centers found reductions in juvenile crime even though baseline levels were substantially less than in the Perry Preschool study for adult crime. In the Chicago study, 17 percent of children who had participated in the preschool program had been arrested for juvenile crimes by age 18, compared to 25 percent of the group who had not attended the preschool program, a significant difference.¹⁸

The 2000 Head Start study found that only 5 percent of females who had participated in Head Start had been arrested for a crime, compared with 15 percent of females who had not participated.¹⁹

The Mauritius study provides evidence that the effects of preschool education on social-emotional development and behavior are not tightly circumscribed by culture or social context. The Mauritius enrichment program significantly reduced anti-social behaviors including conduct disorder and psychotic behavior at age 17. At age 23, the preschool program significantly reduced criminal offenses: in the past five years, 24 percent of the program participants reported a criminal offense compared to 36 percent of the control group. The benefits of the program were found to be greatest for children who were malnourished at age 3.²⁰

The effectiveness of preschool education in improving social-emotional development and reducing crime can depend on the type of curriculum used. The High/Scope curriculum study found that just 6 percent of those who had the High/Scope curriculum, which

emphasized child-initiated activities, needed treatment for emotional impairment or disturbance during their schooling, compared to 47 percent of children in the Direct Instruction group.²¹ Less than one-quarter (23 percent) of the High/Scope group reported at age 15 that they had engaged in 10 or more acts of misconduct, compared to over half (56 percent) of the Direct Instruction group. At age 23 only 10 percent of the High/Scope group had been arrested for a felony, and none had been arrested for a property crime. In contrast, 39 percent of those who had participated in programs using the Direct Instruction model had been arrested for a felony and 38 percent for a property crime.

The Abecedarian study did not find any impact of preschool on crime.²² Similar percentages of the program and control groups admitted to carrying a weapon or violent behavior during the past month (35 percent and 33 percent, respectively). The percentages that reported convictions for misdemeanors (14 percent and 18 percent) or felonies (8 percent and 12 percent) were similar for both groups as well. It is unclear why the Abecedarian program had less impact on crime. Two potential explanations seem deserving of consideration. First, the baseline involvement in crime for the control group was relatively low, substantially less than that for the preschool group in the Perry Preschool study. When crime rates are already low, it simply may not be possible to reduce them much. Second, the curriculum may not have adequately addressed social and emotional development, including the development of attitudes regarding thinking ahead and accepting personal responsibility for one's actions.

Impacts of Preschool on Family Relationships

Preschool programs have long-term effects on participants' decisions about marriage, children, and family. Those who have attended preschool may be somewhat more likely to delay having children and have better relationships with their families.

The Perry Preschool Study found that by age 40, those in the program group were more likely to have been married and to have been married for more years (although the differences were not significant). By age 40, 55 percent of the program group members had been married six or more years, compared to 38 percent of the control group. While 32 percent of those in the program group had never been married, this was the case for 49 percent of the control group.²³

There is some evidence that the family relationships of Perry Preschool participants were more positive than those in the control group. State records indicate that at age 40, significantly fewer of the program group (13 percent) than the control group (24 percent) had received family counseling in the previous seven years (ages 34 to 40). When asked how well they were getting along with their families, the two groups had significantly different assessments—75 percent of the program group said “very well” and 25 percent said “fair”; in comparison, 64 percent of the control group said they were getting along with their families “very well,” 27 percent said their family relationships were “fair,” and 9 percent said “not too good.”

The Perry Preschool study found that males who had participated in the program were significantly less likely than males in the control group to have children they did not raise themselves (43 percent versus 70 percent). Overall, 33 percent of the children of the control group were not raised by their own parents compared to 18 percent of the preschool group's children. The study also found that by age 19, females who had participated in the program had significantly fewer pregnancies than females in the control group.²⁴ By age 40, 16 percent of females who had been in the program had one or more abortions, compared to 46 percent of the females in the control group (a large, although not statistically significant, difference). The study found no other significant effects on the number of children, the number of children born out of wedlock, or the median age at which the first child was born.

In the Abecedarian study, the program group tended to delay parenthood longer than the control group. Among those who had children by age 21, the average age at which their first child was born was 19.1 years for the program group compared to 17.7 years for the control group, a significant difference. In another significant finding, 26 percent of those in the program group had been teen parents (were 19 or younger when their first child was born), compared to 45 percent of the control group. A similar (though not statistically significant finding) is that 56 percent of women in the program group reported that they did not have any children as of age 21, versus 43 percent of the control group.²⁵

The High/Scope curriculum study indicates that curriculum may influence program participants' later decisions about marriage and family. While 31 percent of the High/Scope group had married and were living with their spouses, no one from the Direct Instruction group was doing so.²⁶

Impacts of Preschool on Health

Preschool can influence participants' decisions that affect their health. Studies have found notable, although not always statistically significant, impacts on choices about whether to smoke or use drugs. However, similar findings across studies increase confidence that these are not due to chance and it is even possible to pool data across studies to increase the power of analyses to detect effects.

Data from the Perry Preschool study show that at age 27, those in the program group were much more likely than those in the control group to report always wearing seatbelts (57 percent versus 34 percent).²⁷ The study also determined that those in the program group were somewhat (although not significantly) less likely to smoke. At age 40, 42 percent of the program group reported that they smoked or used other forms of tobacco, compared to 55 percent of the control group. Males in the program group were significantly less likely than males in the control group to have used marijuana (48 percent versus 71 percent). At age 40, males in the program group were significantly less likely to report having used sedatives, sleeping pills, or tranquilizers in the previous 15 years compared to males in the control group (17 percent versus 43 percent).

The Abecedarian study also found that individuals who had participated in the preschool program differed from those in the control group in decisions that can affect their health, including use of drugs and smoking. There was a notable difference in smoking, with 39 percent of the program group describing themselves as regular smokers compared to 55 percent of the control group. While this difference itself was not significant, a statistically significant reduction in smoking among those who had participated in preschool was found when these data from the Abecedarian study were pooled with data from the Perry Preschool program.²⁸

The Abecedarian study found a significant effect on marijuana use, with 18 percent of the program group reporting that they had used marijuana in the past 30 days, compared to 39 percent in the control group. The study did not find any significant effects on the use of other illegal drugs, alcohol use, or binge drinking, which echoes the Perry Preschool study's findings.

Impacts of Preschool on Community Involvement

Studies have not demonstrated a strong or consistent impact of prekindergarten participation on later civic participation or volunteer activities. However, a few studies offer at least some indication that prekindergarten participants may go on to have greater involvement in and a higher sense of responsibility toward their communities.

In the Perry Preschool study, the program and control groups did not differ significantly in their degree of community involvement and civic participation at age 40.²⁹ However, the percentage of the program group demonstrating community involvement was slightly (but not significantly) higher than that for the control group for five of six indicators:

- 83 percent of the program group considered religion very important in their lives, compared to 75 percent of the control group.
- 74 percent of the program group were registered to vote, compared to 63 percent of the control group.
- 52 percent of the program group had voted in the previous presidential election, compared to 46 percent of the control group.
- 35 percent of the program group had voted in the last state or local election, compared to 25 percent of the control group.
- 32 percent of the program group had attended a school board or city council meeting, compared to 27 percent of the control group.³⁰

Most other studies have not examined the impact of prekindergarten on community involvement. However, the High/Scope curriculum study found that 43 percent of the

High/Scope group had done volunteer work, compared to just 11 percent of the Direct Instruction group.

Conclusion

Several studies demonstrate that a high quality preschool experience can change lives for the better. It is not clear precisely what accounts for the improved life choices of those who have attended preschool, or what components of a preschool program are most important in accounting for the positive outcomes found in these studies. Plausibly, the degree of risk in the population served for adverse development and unfortunate life choices, the degree to which the program appropriately addresses social and emotional development, and the broader societal context can all influence program effectiveness. The High/Scope Curriculum Study suggests that a preschool curriculum with a strong role for child-initiated learning and personal responsibility is most likely to produce positive outcomes for those who participate. Yet there is still uncertainty about what other aspects of preschool programs most contribute to producing beneficial results, given that the programs discussed above, while having a number of similar features and outcomes, differ in several ways. For example, the Chicago Child-Parent Centers placed a strong emphasis on family support, while the Abecedarian program provided family support services to both the preschool participants and the control group, so such services cannot account for this program's effects. The finding that malnourished children benefited most in the Mauritius study could indicate the importance of nutrition (where this is a serious problem) or that children in the most economically disadvantaged circumstances stand to gain most from greatly improved preschool education.

The long-term benefits of the high quality preschool programs may be tied at least in part to the positive impacts that high quality preschool programs have on children's social and emotional development. For example, the Perry Preschool study found reduced levels of aggressive behavior among preschool participants starting in the early elementary school years.³¹ These findings are consistent with findings from some short-term studies of other early childhood programs. A large-scale study of the federal Early Head Start program, which serves infants and toddlers, found that children who participated in the program had lower levels of aggressive behavior.³²

Yet, early care and education programs will only have these positive effects on social and emotional development if they provide appropriate experiences. The Abecedarian study initially found that increased aggression among children who participated in the program, as judged by teachers during the first years of school. The study directors modified the curriculum mid-study to try to reduce such effects. These negative effects were not found to persist over time.³³ A few large-scale studies have also raised some potential concerns that long hours of child care may have modestly negative consequences for anti-social behavior, at least in the short term. The NICHD study of child care in the United States—a large-scale study examining a broad range of public and private child care arrangements—found that while child care produced positive cognitive outcomes, long hours of typical child care from an early age may produce modest increases in aggression.³⁴ Similarly, a large-scale study of preschool education in England found

modest positive effects on most dimensions of social and emotional development, but also modest negative effects of care before age three on anti-social behavior (though this was decreased by high quality preschool experiences from three to five).³⁵ Further research is warranted to facilitate the development of public policies to promote environments that better support children's healthy social and emotional development.

Further research is needed to elucidate the pathways by which preschool programs can produce the greatest long-term benefits for children's social and emotional development and life choices. It certainly appears that preschool can start a positive chain reaction, whereby children have successes in school and at home and are rewarded for positive attitudes and behaviors, which in turn motivates them to continue to make choices that benefit their long term healthy development. They develop stronger relationships with their families, schools, and communities, which can reinforce their positive attitudes and behaviors. Thus, the benefits of preschool feed on one another, leading children to greater success throughout their lives. How to best set this process in motion and sustain its long-term benefits is a topic well worth further study.

A wide range of studies in the United States and abroad demonstrate that high quality preschool education can significantly enhance children's social and emotional development. The benefits of these developmental gains include improving important life choices that affect education, family, work and community life far into the future.

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