

Resilience Research for Prevention Programs

Opportunities for Child-Initiated Learning: Long-term Follow-up Studies of Preschool Programs



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A series of groundbreaking studies shows that the two years a child spends in preschool with a resilience-based curriculum can be key to preventing drug abuse and related high-risk behaviors in later life. The High/Scope Educational Research Foundation studies also document impressive cost benefits of such early childhood prevention programs, and suggest a strong link between preschool curriculum and reduced costs to crime-victim assistance and the justice system.

The illuminating findings are from a study of 123 disadvantaged pupils at Perry Preschool in Ypsilanti, Michigan, at ages 15, 19, and 27; from a curriculum comparison study of 68 students through age 23; and from a meticulous cost-benefit analysis. High/Scope Educational Research Foundation President David Weikart, Research Division Chair Lawrence Schweinhart, W. Steven Barnett of Rutgers, and colleagues conducted the studies.

The program that has shown such remarkable success is the Perry Preschool program. Speaking about it at the Rosalynn Carter Symposium on Mental Health Policy, Promoting Positive and Healthy Behaviors in Children, in November 1998, Weikart said: It takes more than a good heart and good intentions it takes sound [implementation] methodology. The High/Scope longitudinal research explores the critical elements of such a methodology.

The High/Scope Educational Research Foundation's Perry Preschool Project is one of only a handful of long-term follow-up evaluations of prevention interventions. (Most longitudinal studies have simply followed students, without introducing and observing the effects of a specific health strategy.) It began in Ypsilanti, Michigan, in 1962 and continues today. This study has followed 123 children from poor African-American families; 58 were in the experimental group and 65 in the control group. Two important selection criteria were low parental socioeconomic status and a child's IQ, which at project entry was in the range of 70-85 (Schweinhart & Weikart, 1980, p.17). These children clearly had the odds against them. The youngsters attended a preschool program at ages three and four for either one or two years. The Perry Preschool Program focused on holistic development cognitive, language, social, and behavioral.

This focus includes the essential ingredients of resilience education. The High/Scope Perry Preschool Program model emphasizes active child-initiated

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Healthy Bodies, Healthy Souls

"The [Perry Pre-school] program involved no set curriculum and could be duplicated with \$100 or so of materials. At the beginning of each day the children were asked to plan their 'work' for the morning. Rather than telling the children what to do, the teachers would ask each child to make an estimate of what he/she would accomplish that day and to take responsibility for carrying out whatever he/she decided. Gradually, the children came to see themselves as planners - as people who had some power over their lives, not as passive victims."

—Ann Crittenden, Wall Street Journal, November 29, 1984

learning, problem-solving, decision-making, planning, and a high degree of interaction between adults and children and among the children themselves (see sidebar). In addition, teachers conduct weekly home visits and encourage parents to be involved as volunteers in the classroom.

Changed Lives – Long-term Gains

The impact of the Perry Preschool Program has been profound. A 1984 study titled *Changed Lives* (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart) reported how children who participated in the Perry Preschool Program showed the following outcomes at age 19 compared with a matched control group [see also Figure 1]:

- Increased cognitive gains
- Improved scholastic achievement during school years
- Decreased crime/delinquency
- Decreased teen pregnancy
- Increased post-secondary enrollment
- Increased high school graduation rate
- Increased employment rate

Changed Lives is credited as being the catalyst for the federal government's preservation and expansion of Head Start. The report also triggered state public education to begin at age four, especially for handicapped and disadvantaged students. The impact has been strong at the local level, too, where school districts and social service agencies have since expanded both educational and child-care facilities.

The follow-up study of this Perry Preschool population was published in 1993 in *Significant Benefits: The High/Scope Perry Preschool Study Through Age 27* (Schweinhart, Barnes, & Weikart). This study found project participants have made the transition to adulthood much more successfully than have adults from similar backgrounds. Among other findings: As adults, those who attended Perry Preschool have committed far fewer crimes, have higher earnings, and possess a greater commitment to marriage (see Figure 2).

Resilience Curriculum Matters

In 1967, High/Scope initiated the longitudinal *Preschool Curriculum Comparison Study Through Age 23*. This additional research, on a group of 68 children, was to assess whether all preschool programs would have positive outcomes or if only certain approaches worked. Three curricula were examined: the High/Scope model of constructivist, child-initiated developmental learning; a traditional nursery school approach, which was play-centered; and a direct-instruction approach in which teachers led the activities, workbooks were the only classroom materials, and the acquisition of academic skills was the prime objective. All three included a parent involvement component with home visits.

In the early years, virtually no differences were found in intellectual and academic performance among the curriculum groups. The conclusion from the study through age 10 was that well-implemented preschool curriculum models had about the same

FIGURE 1.**High/Scope Perry Preschool Study Major Findings at Age 19**

Category	Respondents	Perry Group	No Program Group
Employed	121	59%	32%
High school graduation or GED	121	67%	49%
College or vocational training	121	38%	21%
Ever detained or arrested	121	31%	51%
Females: teen pregnancies per 100	49	64	117
Functional competence (APL Survey possible score 40)	109	24.6	21.8
Percent school years in special education	112	16%	28%

(Adapted from *Changed Lives*, 1984)

strong effects on children's intellectual and academic performance (Schweinhart & Weikart, 1997b, p. 118).

However, at age 15, when the measurement of outcomes was expanded to include community behavior, a very different picture emerged (Schweinhart, Weikart, & Lerner, 1986). The study revealed that students from the High/Scope Perry Preschool and the nursery school groups, as compared with the direction instruction group, reported engaging in:

- One-half as many acts of personal violence
 - One-fifth as many acts of property violence
 - One-half as many status offenses
 - One-half as many acts of drug abuse
 - More sports and after-school activities

There were notable substance abuse and violence differences at age 15. Overall, The High/Scope group reported an average of only 5.9 acts of misconduct (the average sum of scores on 18 items including marijuana and other illegal drug use) as compared with the 14.9 acts of misconduct reported by the Direct Instruction group (Schweinhart & Weikart, 1997c, p. 50). In addition, 51 percent of the families of Perry preschoolers, compared with 28 percent of the control-group families, said their children had done as well in school as they would have liked. Indeed, Perry preschoolers did perform better academically, and parents were more likely to be satisfied with

FIGURE 2.**High/Scope Perry Preschool Study Major Findings at Age 27**

Variable	Perry Program	No Program
\$2,000+ monthly earnings	29%	7%
Own home	36%	13%
Years of schooling completed	11.9	11
High school graduate or GED (all) <ul style="list-style-type: none"> ➤ Teen mothers graduated or GED 	71% 54%	84% 35%
High school mean grade point average	2.09	1.68
Births to females out of wedlock	57%	83%
Female mean age at first child birth	22.2	19.4
Females married, living with spouse	40%	8%
Males years married	6.2	3.3
Social services ever used past 10 years	59%	80%
Five or more lifetime arrests (all) <ul style="list-style-type: none"> ➤ Males 	7% 35%	12% 49%
Drug dealing or drug making arrests	7%	25%
Drink alcohol <ul style="list-style-type: none"> ➤ Never ➤ Once in a while ➤ Several times a week ➤ Daily 	44% 40% 14% 2%	36% 38% 18% 8%
Smoke cigarettes	45%	56%
Easy to feel close to others	66%	48%
Easy to work, study hard all day	47%	33%

(Adapted from *Significant Benefits*, 1993)

the child's performance. Those who had been pupils at Perry Preschool and those from the other two groups self-reported as indicated in Figure 3.

The ongoing preschool comparison study shows dramatic differences between the groups also when participants were age 23. The results appeared in *Lasting Differences* (Schweinhart & Weikart, 1997b, 1997c). Both the positive trend for greater social skills responsibility in the High/Scope Perry Preschool and nursery school groups, and the increasingly negative social behavior trend in the direct-instruction group, continued.

Children in the High/Scope Perry Preschool Program committed fewer crimes, had better success on the job, maintained healthier relationships and were more likely to volunteer in their community than those who received direct instruction (see Figure 4). Nursery school students also reported more favorable outcomes in several areas than those in direct instruction programs.

In terms of education outcomes, the three curriculum groups did not differ significantly in average IQ or average achievement test scores. Neither did they significantly differ in high school graduation rates. In other words, reading and other achievement test scores do not suffer if children's preschool experience emphasizes learning through play (as

FIGURE 3.

Substance Abuse and Violence Perry Preschool Study Major Findings at Age 15

Misconduct	Perry Program	No Program
Habitually lie about age or ID	2%	9%
Habitually drink without permission	5%	9%
Habitually smoke marijuana	2%	4%
Habitually carry gun or knife	5%	13%
Habitually take institutional property	2%	7%
Habitually take personal property	0%	4%
Habitually caught for breaking the law	0%	7%

(Adapted from *Young Children Grow Up*, p. 55)

FIGURE 4.

Social Behavior Outcomes Comparison Study at Age 23

Outcomes	High/Scope Perry	Nursery	Direct Institution
Treatment for emotional impairment	6%	6%	47%
Volunteer work	43%	44%	11
Felony arrest ever	10%	17%	39%
Felony arrest at age 22-23	9%	NA	34%
Property crime arrest	0%	NA	38%
Violent crime	0%	0%	17%
Assault with dangerous weapon	0%	0%	17%
Arrest for dangerous drugs	5%	4%	9%
11+ acts of misconduct at age 15	23%	23%	56%
Some types of people gave them hard time	36%	NA	69%
Planned to graduate from college	70%	57%	36%
Suspended from work three times	0%	0%	11%
Drink alcohol			
> Never or once in a while	100%	72%	74%
> Several times a week/daily	0	28%	26%
Three to five pregnancies (females)	0%	20%	40%
Spouse living in respondent's household	31%	18%	0%
Has checking account	46%	17%	11%
Voted in last presidential election	62%	22%	21%

(Adapted from *Curriculum Comparison Study Through Age 23*, 1997 and *Lasting Differences*, 1997) NA = not available.

FIGURE 5.**Return to Taxpayers on Expenditures Per Perry Preschool Program Participant**

Area of Taxpayer Savings	Savings
Overall decreased need for special schooling	\$6,287
Increased income taxes	\$8,847
Decreased welfare costs	\$2,918
Decreased justice systems costs	\$12,796
Decreased crime victim costs	\$57,585
Total public benefits	\$88,433
Less Perry Preschool cost*	(\$12,356)
Net public benefits	\$76,077

in the High/Scope and nursery school models) rather than academic skills (as in the direct-instruction model) (Schweinhart & Weikart, 1997a, p. 9).

Cost Benefit: Perry Preschool Outperforms Stock Market

Perhaps the greatest resource the Perry Preschool Project studies offer prevention practitioners is a powerful example establishing the cost benefit of a preventive strategy. The High/Scope Foundation published the first pivotal economic impact study in 1978, and the most recent in 1996 (Barnett).

Conservatively, for every dollar spent on a Perry Preschool program, the money was returned to society more than seven-fold. Figure 5 explains how per pupil expenditures of \$12,356 returned \$88,433 to taxpayers. The savings to taxpayers and crime victims are \$59,095 for female participants, and \$93,188 per male student enrolled in the Perry Preschool Program.

Present value in thousands (1992 discounted at 3 percent). Note: this includes very conservative adjustment both for inflation and for lost estimated interest earnings on principal.* Reflects PPP operating cost per child at \$7,252 per child per school year, with 13 children attending one year and 45 attending two years.

Crime-victim costs are established using the research of M.A. Cohen and include direct losses, pain and suffering, and risk of death for the specific crimes of rape, arson, bank robbery, robbery assault, auto theft, burglary and larceny. Prevention literature has established that these crimes are frequently related to alcohol and other drug use. Barnett estimates that over their lifetimes, Perry Preschool participants will avoid estimated crime-related costs of victimization (\$57,585) and criminal-justice system services (\$12,796). These savings total \$70,381 per Perry-enrolled preschooler.

When child care and increased job compensation are calculated, total measured benefits for both taxpayer and program participant are estimated at \$242,646 per enrolled child undiscounted, or \$108,002 discounted at three percent.

To put these figures in perspective, the economic return from the High/Scope Perry Preschool program was so extraordinary that the program outperformed the stock market over the same period of time the real return on the stock market in that period was about 6.8 percent. By comparison, the High/Scope Perry Preschool program produced a real (i.e., inflation-adjusted) annual rate of return that exceeded 11 percent (Barnett, 1996, p.85).

Lessons Learned

How we do what we do is what makes the difference.

This first lesson is reiterated in research like High/Scope s that asks not only if a strategy works, but also *why* it works. Preschools, like mentoring, are not inherently good interventions; success depends on how programs are done. The process matters more than the program.

Like prescriptive (fixing) mentoring that ignores young people s developmental needs, adult-driven, academically focused preschools that ignore young children s developmental needs are not only ineffective,

“Unlike their High/Scope and Nursery School counterparts, who learned that adults and peers provide support and encouragement, the Direct Instruction children learned that they had little control over their lives. As adults, they engaged in more property crimes, showing a lack of respect for the property of others, and they identified more kinds of people in the community who ‘gave them a hard time.’ Direct instruction during their early childhood years did nothing to dispel the lesson that many children living in poverty learn—that they are not in charge of their lives, others are. They failed to learn vital social and

they are harmful compared to child-centered programming. According to Schweinhart and Weikart, In light of the benefits that children might obtain from being enrolled in early childhood programs emphasizing child initiative, the increase in felony arrests might well be considered a harmful effect of providing a direct-instruction program for young children living in poverty (1997c, p. 66).

Prevention and education that works is child-initiated.

High/Scope research also confirms the best preschools are those that offer a child-directed curriculum in which teachers let children’s interests guide learning. The High/Scope studies have clearly shown the power of child-initiated learning to catalyze a life trajectory, to spark the improved behaviors and social skills that will propel a child through adolescence into adulthood. Child-initiated learning triggers the protective mechanism of self-righting (Rutter, 1987; Werner & Smith, 1992). This kind of child-designed learning encourages youngsters to tap natural common-sense resilience.

The researchers hypothesize that three internal assets/abilities are developed even at this early age through a child-initiated, constructivist curriculum such as that used in the Perry Preschools: moral action, reasoning, and planning. Citing DeVries, the researchers compare a constructivist, reciprocal, and collaborative teaching with direct instruction.

When we unilaterally focus on giving children information, we are also communicating lessons about human relations. In the process we are creating the context for construction of interpersonal habits, personality, and character. Our study (DeVries, Reese-Learned, & Morgan, 1991) suggests that when children experience a heavily unilateral atmosphere, their sociomoral action and underlying reasoning are less advanced than when children experience a more reciprocal atmosphere (Schweinhart & Weikart, 1997c, p. 12).

As a representative at the National Association for the Education of Young Children puts it: If we don’t work at helping kids learn self-control, it gets difficult later on (Jacobson, 1997).

Similarly, a child’s ability to plan in preschool influences how he behaves socially as an adult. The plan, do, review process of the High/Scope curriculum encourages children in small groups to select and plan their own activities, to make decisions, and to be responsible for their choices. This planning ability has also emerged in resilience research as one of the internal assets, across the life-span, that allows successful development despite risk and adversity (Rutter, 1984).

In sum, research documents that social and moral action, reasoning, planning ability, and other critical attributes are needed for young people to tap their resilience early on and grow into healthy adults. These characteristics include initiative, empathy, social problem solving, self-efficacy, goals, and sense of purpose. Optimal environments are ones that give youth meaningful responsibilities. Young people need opportunities to plan, actively and collectively problem-solve, make decisions, and contribute their gifts to others (Benard, 1991; Werner & Smith, 1992). [See sidebar.]

Individuals throughout their lives need places and people that give them power.

High/Scope studies are focused only on the effects of early childhood preschool. Other studies, including out-of-school, in-school, and even other prevention program experiences that promote successful outcomes in adolescence, reach the same conclusions. So do studies of adult work experience. People want some control over their lives, want to have the power to make decisions, to plan, to help others. While providing this early in a child's life is incredibly powerful, resilience and community empowerment research also tells us it is never too late to change a life trajectory (Mills, 1994; Pransky, J., 1998).

The current retreat from adult responsibility for the lives of other people's children may be due in part to the powerlessness many adults now feel living and working in families, schools, and organizations where they do not experience their own resilience, self-efficacy, or power to make a difference. As the High/Scope studies demonstrate, this experience, even from a young age, carries over to all aspects of adult responsibility including voting.

Prevention and education programs that make a difference depend on training the staff in developmental caregiving.

While reciprocity, collaboration, power sharing, and constructivist/child-initiated pedagogy come naturally to some teachers, most have not been trained in this developmental approach. Given the power teachers have to make a difference, and as resilience studies show, it is absolutely critical that teachers be trained in developmental pedagogy. Furthermore, preventionists and educators at all levels need pre- and in-service training in the art of developmental caregiving. Developing the health of the helper is the first order of business (Pransky, G., 1998).

This research underscores the tremendous power of prevention.

With the current focus on unproductive control, coercion, and punishment of younger and younger children, prevention is barely acknowledged. The High/Scope studies provide powerful, longitudinal outcome evidence that meeting developmental needs from early childhood is one of the simplest, most cost effective, common-sense and compassionate approaches to dealing with social problems. According to Rolf Loeber, a criminologist at the University of Pittsburgh: The High/Scope Preschool Curriculum Comparison Study and the High/Scope Perry Preschool Project attest to the high preventive value of the High/Scope program... [and] represent a pioneering effort to reduce later delinquency (Schweinhart & Weikart, 1997c, p. 78).

Resilience-based prevention is cost beneficial.

The High/Scope fiscal study of early child-initiated learning finds for every \$1 spent, at least \$7 is saved. The research provides practitioners a powerful model for presenting the monetary impact of prevention programs. It's a message that has had a significant impact on early childhood education nationally and internationally, with similar programs being replicated around the world.

The best of science the longitudinal studies of resilience as well as of prevention interventions clearly demonstrates the wisdom in funding early childhood programs such as Head Start and other effective early prevention efforts. All children, adolescents, and parents throughout the life-span can be provided supports and opportunities that enable positive development.

decision-making skills (which are developed by programs emphasizing child-initiated learning activities)—skills that would permit them to assume responsibility for their lives as they moved from the dependence of childhood to the independence of adolescence and adulthood... All they had to show for a year or two of intense drill and practice in early childhood was an ephemeral advantage in intellectual performance at the end of the preschool program. They had none of the lasting benefits associated with high-quality preschool programs" (Schweinhart & Weikart, 1997, p. 66).

*Think
About
It!*

Clearly, preschools can, and have, changed lives for the better: How do they fit into your present community-based prevention plan?

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- Note: High/Scope monographs may be ordered by phone: 1-800-40-PRESS.

NATIONAL RESILIENCE RESOURCE CENTER

The National Resilience Resource Center (NRRC) is located at the University of Minnesota. Executive Director Kathy Marshall and associate for program development Bonnie Benard guide long-term systems change initiatives in selected school and community sites. Resilience research-based systems change training and technical assistance services are available on a fee-for-service basis. For service related requests write National Resilience Resource Center, University of Minnesota, College of Continuing Education, 202A Wesbrook Hall, 77 Pleasant Street SE, Minneapolis, MN 55455 or contact NRRC@cce.umn.edu. The NRRC logo was created by John B. No Runner.

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