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# Houston Parent Child Development Center

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# Houston Parent Child Development Center

The Houston Parent Child Development Center (H-PCDC) operated as a research and development program in low-income Houston neighborhoods from 1970 to 1980 as one of three<sup>1</sup> experimental PCDCs sponsored by the Office of Economic Opportunity. It continues today, but only as a service program. PCDCs were created in response to the perceived failure of Head Start to make meaningful improvement in the lives of disadvantaged children. Some observers argued that this was because Head Start began too late (age four), after the effects of poverty had already compromised the development of children, and because the Head Start intervention was too limited, lasting only one year. PCDCs were intended to address these perceived shortcomings by beginning earlier (age one) and providing services for a longer period of time (two years). The H-PCDC focused specifically on Mexican-American families and provided home-based services in the first 12 months of the program and center-based services for the second 12 months, focusing on teaching parents about child development and parenting skills.

Dale Johnson of the University of Houston and his colleagues (the “Houston team”) conducted the H-PCDC evaluation, using random assignment for cohorts from 1972–1980. At the time that the children entered school, there were no statistically significant differences between the program and control groups on standard school achievement tests. By the third grade, however, the program group had significantly higher reading scores, and by the seventh grade, they had significantly higher scores on all achievement tests. The evaluation, however, suffered from high levels of attrition and possible problems in carrying out random assignment. In addition, the findings are limited to children from low-income, Hispanic families that may have been more education-oriented, so they cannot be generalized to broader segments of the low-income population.

### Program Design

**Program group.** The H-PCDC targeted families with a one-year-old child from low-income, Mexican-American families. Each year, Dale Johnson of the University of Houston and his colleagues conducted a door-to-door survey of homes asking about the presence of an eligible child.

Most participating families were intact, with both biological mother and father present. At

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<sup>1</sup>Birmingham and New Orleans were the other two locations for PCDCs

the time of entry into the study, the mothers' mean age was twenty-eight, with an average of seven and one-half years of schooling. About two-thirds were bilingual.<sup>2</sup>

**Services.** The H-PCDC was a two-year program designed to promote social and intellectual competence of children from low-income, Mexican-American families. In the first year of participation (when the child was one year old), mothers received twenty-five to thirty home visits of ninety minutes by paraprofessionals providing instruction on infant development topics. The instruction was intended to improve the mothers' parenting skills, especially in language development. Also during the first year, program families participated in weekend human relations training sessions on family-related topics. During the second year, mothers and their two-year-old children attended center-based activities four hours a day, four mornings per week, for nine months. Structured play sessions for mothers and children were videotaped and analyzed in order to provide mothers with tips for improving the way in which they interact with their children. In addition to sessions on child development, mothers received instruction in budgeting, meal planning, and other topics suggested by the mothers, such as driver education and human sexuality. They also took part in English language classes. Both mothers and fathers were active in the Parents Advisory Council.

**The Evaluation.** Families with one-year-olds were randomly assigned to program or control groups between 1972 and 1980.<sup>3</sup> A total of 389 children were randomly assigned, 236 to the program group and 153 to the control group. The last follow-up was conducted when the children were ages nine to sixteen, which was six to thirteen years after they completed the program. (The longest follow-up was for those children who enrolled earliest.)

## Major Findings

The H-PCDC produced initial IQ gains at ages two and three, but these were no longer statistically significant when the children were four and five years old. At the time that the children entered school, there were no statistically significant differences between the program and control

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<sup>2</sup>These findings are based on the earliest cohorts. See Susan Ring Andrews, Janet Berstein Blumenthal, Dale L. Johnson, Alfred J. Kahn, Carol J. Ferguson, Thomas M. Lasater, Paul E. Maone, and Doris B. Wallace, "The Skills of Mothering: A Study of Parent Child Development Centers," *Monographs of the Society for Research in Child Development* 47, no. 6 (1982): 34.

<sup>3</sup>For the 1972 and 1973 cohorts, eligible families were randomly assigned and then invited to participate. For other cohorts, random assignment took place after the families agreed to participate, having had the program and control conditions described fully. See Brent Bridgeman, Janet B. Blumenthal, and Susan R. Andrews, *Parent Child Development Center: Final Evaluation Report* (Washington, DC: U.S. Department of Health and Human Services, April 1981), 35.

groups on standard school achievement tests.<sup>4</sup> By the third grade, however, the program group had significantly higher reading scores. By fifth grade, the program group had significantly higher math scores, and by the seventh grade, they had significantly higher scores on all achievement tests. There also appear to be scattered positive effects on child health and family socioeconomic status.

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

*IQ.* The H-PCDC produced a statistically significant 8 point increase in the Bayley Mental Development Index (MDI) at age two. At the end of the program, when the children were three years old, the Houston team found a statistically significant 3.9 point IQ difference. When tested again at age four and five, the children's IQ differences were no longer statistically significant.

*Achievement.* At the time that the children entered school (first grade), there were no significant differences on standard school achievement tests. By the third grade, however, the program group had significantly higher reading scores and, by seventh grade, they had significantly higher scores on the Iowa Tests of Basic Skills (see table 1).

**Table 1. H-PCDC: Achievement Test Effects**

Grade and skill area	Program group	Control group	Difference (percentage point)
Grade 1			
Reading	49	47	—
Math	55	51	—
Composite	49	49	—
Grade 3			
Reading	46	38	8
Math	57	51	—
Composite	51	42	—
Grade 5			
Reading	48	40	—
Math	67	58	9
Composite	55	48	7

<sup>4</sup>Most of the findings reported here are based on Dale L. Johnson and Janet Blumenthal, paper presented at the Biennial Meeting of the Society for Research on Child Development, Seattle, 1990, and Dale L. Johnson and Todd Walker, "A Follow-up Evaluation of the Houston Parent-Child Development Center: School Performance," *Journal of Early Intervention* 15, no. 3 (Summer 1991): 226-36; See also Andrews et al., 1-83; Bridgeman, Blumenthal, and Andrews, 1981.

Grade 7			
Reading	51	39	12
Math	61	49	12
Composite	53	44	9

*Source:* Dale L. Johnson and Janet Blumenthal, paper presented at the Biennial Meeting of the Society for Research on Child Development, Seattle, 1990.

*Notes:* Only significant differences are reported. “—” indicates that the difference is not statistically significant at the 5 percent level. Test scores based on Iowa Tests of Basic Skills.

**School readiness/performance.** Despite the higher achievement test scores, the Houston team found no statistically significant differences in grades between the program and the control group. In addition, there were no significant differences in either grade retention or placement in special education. (This information was obtained from teacher interviews and school records.)

**Socioemotional development.** Relevant tests apparently not administered or results not reported.

**Health.** Maternal reports suggest no statistically significant differences on several measures of child health status, except that program children were somewhat more likely to have seen a dentist in the preceding two years.

**Behavior.** When the children were ages four through seven, parents of children in the H-PCDC program reported fewer behavior problems than did the parents of children in the control group. Similarly, when the children were between ages eight and eleven, teachers rated control group children as “more obstinate, impulsive, and destructive, and as more likely to be involved in fights than children in the treatment group.”<sup>5</sup>

**Crime/delinquency.** Although control group children were more likely to be “impulsive, restless, destructive, and involved in fights” during their elementary school years, there were no differences in delinquency rates between the program and control children in adolescence.<sup>6</sup> Delinquency rates for both groups were very low.

**Early/nonmarital births.** Data apparently either not collected or not reported.

**Economic outcomes.** Data apparently either not collected or not reported.

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<sup>5</sup>Linda Perloff, Pamela Butler, Carolyn Berry, and Peter Budetti, *Literature Review of Outcomes of Early Intervention Programs*, (Evanston, IL: Northwestern University, August 1998), 43.

<sup>6</sup>Institute for Research on Poverty, “Do Intervention Programs for Young Children Reduce Delinquency and Crime?” *Focus* 19, no. 1 (Summer/Fall 1997): 39.

**Effects on parents.** At the final follow-up, the families with children in the H-PCDC were reported to be of higher socioeconomic status, using the Hollingshead index. The Houston team concluded, “As there was no significant difference in the beginning of the program this difference may be a program effect.”<sup>7</sup>

**Benefit-cost findings.** A benefit-cost analysis was not performed. The Houston team, however, notes that the programs were expensive, because they provided “a comprehensive array of medical, social, and educational services that could be found in fragmented form in the community.”<sup>8</sup> The approximate cost of the H-PCDC per mother-child pair was \$10,700 (in 2005 dollars).

### Overall Assessment

The H-PCDC was a random assignment evaluation conducted with a reasonably large sample. The evaluation, however, suffered from high levels of attrition and possible problems in carrying out random assignment. In addition, the findings are limited to children from low-income, Hispanic families that may have been more education-oriented, so they cannot be generalized to broader segments of the low-income population.

**Program theory.** H-PCDC was created in response to the perception that the Head Start program had failed. Some observers argued that this was because Head Start began too late (age four), after the effects of poverty had already hindered the development of children; and that the Head Start intervention was too limited, lasting just one year. Thus, the H-PCDC project was based on the hypothesis that “the age of educational intervention should be extended from the preschool years downward to infancy, and that programs should focus on parents as well as on children,” because “Many observers felt that unless parents were directly involved, the effects of any educational intervention would not last.”<sup>9</sup> The H-PCDC was intended to address these perceived shortcomings by beginning earlier (age one), providing services for a longer period of time (two years), and stressing parental involvement.

**Program implementation.** Participation in the program was relatively high. Over the entire two-year period, participants averaged 400 hours of participation (of a scheduled 550 hours).<sup>10</sup>

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<sup>7</sup>Johnson and Blumenthal, 1991.

<sup>8</sup>Andrews et al., 1982, 73.

<sup>9</sup>Andrews et al., 1982, 2.

<sup>10</sup>Johnson and Walker, 1991, 227.

**Assessing the randomization.** Although the number of program and control group children was comparable at intake, “more control children were available at the time of follow-up.”<sup>11</sup> This discrepancy apparently occurred because the Houston team imposed a requirement that program children complete the two-year program to be included in follow-up data collection, whereas they placed no restriction on control children. The decision to drop the H-PCDC children who did not complete the full two-year program, however, undermined the integrity of random assignment by dropping some children from one group but not the other. The most likely result would be to increase the measured effectiveness of the program.

In addition, for the 1972 and 1973 cohorts, eligible families were randomly assigned and then invited to participate; for other cohorts, random assignment took place after the families agreed to participate.<sup>12</sup> If there were differences in the proportion who agreed to participate in these early cohorts, this procedure could have resulted in differences in the characteristics of the two groups, introducing the potential for bias.

**Assessing statistical controls in experimental and nonexperimental evaluations.** The H-PCDC was evaluated using random assignment, so selection bias should not be a serious problem. The problems with randomization and attrition, however, are possible sources of substantial bias.

**Sample size.** Although the sample of 389 was larger than many evaluations of early childhood education programs, it is still relatively small compared to some larger programs evaluated with random assignment, such as the Comprehensive Child Development Program (see chapter 3), the Early Head Start program (see chapter 6), and the Infant Health and Development Program (see chapter 16). The H-PCDC, however, has the largest sample from a single site.

**Attrition.** Attrition in the H-PCDC was high. When the children were ages nine to sixteen, the Houston team could locate only 275 of the original 389 families (71 percent). They located a smaller percentage of H-PCDC children (66 percent) than control group children (74 percent). The Houston team, however, could not obtain consent forms needed to access school data for about 20 percent of those they located, leaving just 63 percent of the original sample at the final follow up (58 percent H-PCDC children vs. 63 percent of control children). As Johnson explains:

We included program families in the outcome studies only if they completed the full two year program and we included any control families that were available. We lost families from both groups when they moved out of the broad research area, i.e., out of Harris

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<sup>11</sup>Dale L. Johnson and Todd Walker, “A Follow-up Evaluation of the Houston Parent-Child Development Center: School Performance,” *Journal of Early Intervention* 15, no. 3 (Summer 1991): 229.

<sup>12</sup>Bridgeman, Blumenthal, and Andrews, 1981, 35.

County. We also lost families to the program if the mother went to work. There is potential bias in this, but it seems that those women who went to work were probably the more able sub-group. We do not know, as we did not do that analysis.<sup>13</sup>

This high level of attrition, aggravated by the larger drop in program children, is a serious concern.

After comparing the baseline characteristics of those lost to attrition, Johnson and Janet Blumenthal conclude that the attrition experienced was primarily a function of “subject mobility” and that there was no “biased attrition.” Johnson explains: “The possibility of attrition bias was analyzed statistically using time one data and comparing those participants recovered with those not recovered. A large number of analyses showed no evidence of meaningful attrition bias; *i.e.*, there were some significant effects, but they did not form a pattern.”<sup>14</sup>

The Houston team presented no data, however, on the baseline characteristics of the full sample, those lost to attrition, or the final follow-up sample. And, as they caution: “The Houston-PCDC results must be considered in the context of a relatively low follow-up recovery rate. More controlled research is needed before we can be confident about the effects of early childhood programs with low-income families.”<sup>15</sup>

**Data collection.** The data collection relied on a various standardized tests, school records, and parent surveys. Although the data sources were appropriate for the questions being studied, missing data was a problem for many outcome measures.

**Measurement issues.** Most of the cognitive impacts were measured using standardized achievement tests. The primary source of data for school performance and some behavior-related outcomes was school records and teacher ratings. Parental consent was required to access these records, which added to attrition. The Houston team notes that “there seemed to be little systematic record-keeping in the Houston-area schools of the status of children who had left school.” It was not possible to identify those children who had dropped out or who had moved to other schools.

**Generalizability.** Unlike most other early childhood intervention programs, the H-PCDC was limited to low-income, Mexican-American families. Moreover, the families participated twenty to thirty years ago, so the applicability of the findings to current populations is questionable.

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<sup>13</sup>Dale Johnson, University of Houston, e-mail message to Peter Germanis, September 3, 2001.

<sup>14</sup>Dale Johnson, University of Houston, e-mail message to Peter Germanis, August 2, 2001.

<sup>15</sup>Johnson and Walker, 1991, 235.



**Replication.** The H-PCDC has not been replicated. Although PCDCs operated in Birmingham and New Orleans, their methods, program groups, staffing, and theoretical orientation were different. There was one replication carried out in San Antonio with low-income, Mexican-American families, but the evaluation was not completed due to budget-related problems.<sup>16</sup>

**Evaluator's description of findings.** The Houston team concludes that a parent education program could "have long-lasting effects on child competence that are manifest in school performance."<sup>17</sup> They cautioned, however, that because of the high attrition experienced in the project, that more research is needed.

**Evaluator's independence.** Dale Johnson of the University of Houston led the team that created the H-PCDC and carried out most of the evaluations.

**Statistical significance/confidence intervals.** Statistical significance was measured and reported at the 1 percent, 5 percent, and 10 percent levels.

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

**Sustained effects.** The evaluation examined impacts through adolescence, about ten years after program completion.

**Benefit-cost analysis.** Apparently not performed.

**Cost-effectiveness analysis.** Apparently not performed.

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<sup>16</sup>Dale Johnson, University of Houston, e-mail message to Peter Germanis, August 2, 2001. *See also* Bridgeman, Blumenthal, and Andrews, 1981.

<sup>17</sup>Johnson and Walker, 1991, 234.

## Commentary

Dale L. Johnson\*

The Houston Parent-Child Development Center (H-PCDC) was developed as a compensatory early childhood program and was part of the War on Poverty. It is a second generation parent and early childhood education program following the lead taken by such programs as those developed by Ira Gordon (Parent Education Program), Frank Palmer (Harlem Training Project), Susan Gray (Early Training Project), and David Weikart (High/Scope Perry Preschool Project).<sup>1</sup> Much that went into the H-PCDC can be credited to those pioneers, but there is also much about the H-PCDC that is unique. Two things stand out. One is that the H-PCDC is the first program in the parent education area designed to be culturally sensitive. Second is that the program may have been the first deliberate attempt to put knowledge gained in basic psychological and social research into action. In this brief paper only the first issue is addressed here. The second has been discussed earlier.<sup>2</sup>

When the War on Poverty appeared in Houston, Texas, the entire effort was directed toward low-income, African American families. The Department of Psychology, University of Houston, planning group recognized that this emphasis left out a large part of the Houston population and plans were made to develop a program that would be appropriate for low-income Mexican Americans. It was found early on that an ethnically heterogeneous program would not work owing to language differences. From the beginning the Houston planning group was ethnically diverse and included several members who were fluent in Spanish. We believed that for an early childhood and parent education program to be effective it would have to be culturally relevant and sensitive and we made a focused effort to make sure that the program would meet these criteria. The main elements of that effort follow.

### Demographics

We asked the city of Houston demographer for the locations of the most impoverished, Mexican-American parts of the city. She provided us with a highly informative map that we used

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\*Dale L. Johnson is Professor of Psychology at the University of Texas.

<sup>1</sup>Consortium for Longitudinal Studies, *As the Twig Is Bent: Lasting Effects of Preschool Programs* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1983).

<sup>2</sup>Dale L. Johnson, "The Development of a Program for Parent-Child Education Among Mexican-Americans in Texas," in *Exceptional Infant, Volume 3: Assessment and Intervention*, ed. Bernard Z. Friedlander, Graham M. Sterrit, and Girvin E. Kirk (Evanston, IL: Row, Peterson, 1954).

to mark out the program area.

### **Neighborhood Surveys**

Conversations with Margaret Mead, the noted anthropologist, suggested that we should survey the neighborhoods identified and ask residents what they wanted for their children and how the University could help achieve those goals. We had long discussions with a large number of residents and learned that they were virtually unanimous in wanting their children to do well in school and to speak both Spanish and English. They offered suggestions about how this might be done.

### **Day Observations**

We made several all-day observations of mothers and their infants in their homes. In this we followed the methods developed by Barker and Wright (1954).<sup>3</sup> We discovered that mothers rarely spoke to or even interacted with their infants during the day and that the women were quite isolated socially.

### **Home Visiting**

In designing the program we decided on a two stage, two-year program with the first year consisting largely of home visits. This was done because we had learned from our contacts with neighborhood residents and our review of the anthropological literature that Mexican women are not expected to leave their homes and that their major social contacts are limited to female relatives. We thought that having women who were from their neighborhoods visit them in their homes to discuss child development issues would be more acceptable than asking them to come to a center-based program.

### **Language Competence**

All staff, program and evaluation, who worked directly with families were fluent in Spanish and English. This was done to enhance communication.

### **Literacy**

We made printed materials available, but taking into consideration the limited education of most of the women, we did not in any way require that printed material be read.

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<sup>3</sup>Roger G. Barker and Herbert F. Wright, *Midwest and Its Children: The Psychological Ecology of an American Town* (Evanston, IL: Row, Peterson, 1954).

## **Father Involvement**

As it was clear that the eligible families would include a father who was present and active in all family matters, we included fathers in the program. This posed difficulties and it was only after several unsuccessful attempts to include fathers that we found two methods that did work. One was the Family Workshop element of the program that involved entire families, including siblings, grandparents, and whoever was associated closely with the household, in several weekend human relations training sessions. Fathers were invited to play a key role in these sessions.

## **Family Advisory Council**

Fathers were also involved in the Family Advisory Council and it turned out that this was one of the most important elements of the program. All participating families were invited to attend a series of sessions on how to conduct meetings. We taught the basics of Roberts Rules of order and trained people in how to lead committee meetings. We then asked parents to organize an advisory council that would advise the H-PCDC staff on matters related to the program. We asked the Council to suggest new topics for the program. The mothers wanted sex education so “their daughters wouldn’t be as ignorant about sex as they were.” Fathers wanted information about how to buy homes, and they wanted to know more about contraception. In addition, the Advisory Council acted to protect the program from a) incursions by radical Chicano political groups, and b) from conservative politicians in Washington. Council members went with the program director to Washington to plead for funds to continue the program, and they were successful.

## **Technical Advisory Council**

We were required by conditions of the grant to assemble a Council of local experts on poverty, Mexican Americans, and the community. We were able to bring together an illustrious group of community leaders. They did offer sound advice, but we found that as they were not in close touch with the people for whom the program was designed, their advice was of limited value.

## **Research Advisors**

Funding for the PCDCs was sufficient to allow us to bring in experts in several fields to serve as advisors on specific issues. Luis Laosa and Marta Bernal helped with assessment issues. Frank Palmer helped get the program for two-year-olds underway. David Weikart was enormously helpful in suggesting parent education methods. Several people helped us resolve data analysis problems. One especially helpful use of consultants occurred in response to a special question. Should we attempt to teach English to two-year-olds? Our linguist had already devised a program based on teaching phonological features of English. We invited experts in linguistics

and teaching English as a second language, and included Mexican Americans, and after two days of discussion they advised, unanimously, that we should not teach English to the children. Leave that for the schools, they said. Of course, we followed their advice and dropped the phonology sessions.

### **Translation**

All program and research materials were checked for cultural appropriateness. Written materials were translated into Spanish using back-translation procedures and focus groups. Materials developed in Spanish received the same treatment in being translated into English.

### **Assessment**

No child was tested unless fully comfortable in the testing situation. If the child seemed ill at ease testing was postponed and a play session was held instead. The child was tested later. This procedure may have been one reason Stanford-Binet scores were so high (Mean for program and control = 105.5).

### **Leadership**

The granting agency required that PCDC program directors be psychological or educational specialists with doctoral degrees who were expert in both program development and evaluation. We wanted such a person who was also Mexican American and we conducted a nationwide search. We found only nine Ph.D. psychologists in the nation who met most of the qualifications, three of whom had graduated from the University of Houston. None was interested in taking the job. We settled on a Stanford education Ph.D. who was an expert in the field of parent education. A year later she was succeeded by a Mexican American who was also an expert in the parent education field, but was not a program evaluator. The program coordinators were all Anglo when we began the program, but as soon as possible they were replaced by Mexican Americans, several of whom were trained in the program.

### **Gender Issues**

The assignment of staff roles by gender was a highly sensitive issue, but one that was nearly always quite easily resolved by having women play key roles with regard to women in the program. For example, only women members of the staff visited mothers at home for program or evaluation purposes. If a man found it necessary to do a home visit, as was the case in checking the quality of some of the In-Home program teaching procedures, he was accompanied by a woman. There were exceptions in the Center part of the program. English was taught to mothers in the Center by the project linguist, but he was assisted by a woman. The nursery school director was male and he was selected deliberately by the staff to have a male model teaching activities. We made one gender error: we sent a van out to pick up mothers and children in the morning and

Oscar was given driving duties. When two husbands refused to let their wives ride with him we quickly had female staff drive the van.

Attention to these ethnicity and cultural issues greatly strengthened the program. We checked for participant satisfaction and obtained mean ratings of 98 percent indicating almost complete satisfaction with the program.

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