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AUTHOR Johnson, Dale L.; And Others
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ABSTRACT

The Houston Parent-Child Development Center (PCDC) is described. PCDC is similar to most compensatory education programs in its objectives, but different in process as it starts intervention during infancy and directs educational efforts at the parents. The program is open to low income Mexican-American families with at least one child under 3 years of age. The curriculum is taken from research on learning and child development. Communication and open feedback between the staff members and parents are emphasized. The program consists of In-Home, Family Workshops, and In-Center components. An evaluation design is described, involving longitudinal study of children, parents, and other program family members, as well as control group families. Data has been collected for 34 program families and 28 controls after one year, and 17 program and 17 control families after two years of the program. Measures of assessment include the Bayley Scales of Infant Development, Caldwell's Home Inventory, Maternal Interaction Structured Situation, Stanford Binet, and the Palmer Concept Formation Index. Analysis of results is incomplete, but initial results seem to be positive. (DP)

THE HOUSTON PARENT-CHILD DEVELOPMENT CENTER: A PARENT EDUCATION PROGRAM FOR MEXICAN-AMERICAN FAMILIES*

Dale L. Johnson, Hazel Leler, Laurel Rios, Larry Brandt, Alfred J. Kahn, Edward Mazeika, and Billie Bisett

University of Houston

The long range goal of the Houston Parent-Child Development Center (PCDC) is like that of many other compensatory education programs: the primary objective is to help economically disadvantaged children perform more competently in school. The means for achieving this goal differs greatly from those of other programs in that the PCDC begins with infants, not preschoolers, and directs the major educational activities at the parent rather than at the child directly.

The program begins when the child is an infant because we believe it is important to begin this type of work with the prelinguistic child. Cognitive stimulation is involved, but perhaps more important is the development of an attitude toward learning, exploration, and discovery.

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Placing the training focus on the parents, primarily the mother, was done out of recognition that parents have the earliest, longest, and most intense socialization influences on their children. By involving the parents in the child's educational development and helping them to develop the relevant child rearing skills, the possibility of achieving long range goals for the child is increased. This approach seems more effective than that of providing the child with early cognitive stimulation and assuming that gains obtained will be self-maintained. Parents who care about their child's development and have a repertoire of skills should be able to provide a stimulating home environment throughout the child's growing years.

The development of programs designed to help people achieve long range educational goals is difficult and there is much about the process that is unclear. The choice to be made between the many content areas and procedures calls for a degree of knowledge that is not available. These choices also involve many value-laden decisions. Kierkegaard once advised that, "If one is to succeed in leading a man to a certain goal one has to take care to find him where he actually is and to begin there; to be of real help to a person, one must understand more than he does,

but in the very first place, one must understand what he understands."[4]

The Houston PCDC has attempted throughout to be guided by this Kierkegaardian advice. For the "understand more than he does" part, we have relied heavily on the research literature on parent-child relations, longitudinal studies of child development, and the early childhood education work. A series of hypotheses about the conditions that encourage the development of parental and child competence have been prepared to guide program development and evaluation.

As for "understand what he understands", we have taken care to survey the parents, individually and through group discussions, about their wants and expectations before adding new program elements or making major changes in existing elements. Furthermore, a Parent Advisory Council consisting of representatives from the program components provides feedback and evaluation of the program and associated research. Members of the staff who work directly with the families are bilingual and bicultural to foster clear communication between parents and staff. Finally, the training program itself is designed to seek out the level of understanding and interest for each program element and to acquire feedback on this before moving on to new elements.

Program

The Houston Center serves low-income Mexican-American families who have a least one child under three years of age. Its goal is to develop and demonstrate ways of strengthening families and enabling parents to optimize the intellectual, social and physical development of their young children, and to maintain the gains achieved over a long period of time.

When the program child is one year of age, the family is enrolled in an In-Home program. For a year, the mother and child are visited in their home weekly by specially trained bilingual teachers who attempt to help the mother become a more effective teacher of her child. The flexible curriculum is designed to promote the child's sensory, perceptual, conceptual, language, motor and social development.

During the same year the entire family participates with other program families in three or four Family Workshops. About ten or twelve families are brought to a weekend residential retreat center where family members participate in interaction sessions. At various times during a workshop there are sessions for fathers, for mothers, for parents together, for various children's age groups, and for families as units. These focus on strengthening the skills of communication, decision-making, and

other aspects of family functioning. In the children's group, developmentally appropriate adaptations are used. There are activities in nature, art, and recreation, with freedom to explore the woods and pond. A major function of this program is to elicit interest of the fathers and involve them in the entire project.

During the following program year, the mother and the program child, who is now two years of age, participate in an In-Center program. At first, both attend four mornings a week and later two mornings. The curriculum for the mothers has two aspects: home management skills to help the mother develop her own resources and make effective use of community resources, and child development to help attune the mother's sensitivity to the child and to the teaching task. Home management skills have included nutrition, cooking, sewing, and driver education. The child development program has included classroom observation and mother-child interaction tasks which are videotaped and reviewed by the mothers to increase their awareness of teaching skills. Fathers and mothers attend biweekly evening discussion meetings which focus on topics related to their concerns and interests such as home loans, credit, budgeting, program purposes and practices, and their involvement in the program.

Within the In-Home, Workshop and Center programs is a Language Program for mothers and children. The population includes families using Spanish only and families using varying forms and degrees of English. The program is grounded in linguistic principles and theory, with the opportunity for the staff to develop theory and practice further in the field of bilinguality with young children. The goal is not to impose English but rather that both Spanish and English linguistic systems be used effectively as mediating agents. Value is placed both on the cultural and language patterns of the families with their Mexican heritage and on the acquisition of language and skills necessary for educational and occupational advancement. Language instruction and practice are interwoven into all program activities.

As the program families participate in the two-year program above, Outreach, or Community Workers, help them make use of the wide range of medical, nutritional, educational, and welfare services available to them. Medical examinations and laboratory tests are provided for children with followup as indicated.

Evaluation Design

The evaluation design calls for the gathering of data about the program children, mothers and other family members at a number of different points in time. Measures are taken at the beginning of the program, at the end of the In-Home/Family Workshop year, at the end of the In-Center year which terminates active program participation, and at annual followup periods until the program child is eight years of age.

The design also includes a control group of families selected at the same time and in the same way as program families. Control families receive Outreach and medical services only. Assignment to program or control group is on a random basis.

In order to have an evaluative overview of the two year program at the end of one year of operation, we included a group of two-year-old children and their families in the Center program even though they had never participated in the In-Home program. This is a one time occurrence. In the future, all Center participants will have completed the In-Home/Family Workshop program.

The long-range design calls for new cohorts of children and parents to enter the project each year. Approximately 60 families each will be assigned to the program (or experimental) group and control group.

In addition to the annual evaluation of major program impacts, the design also includes evaluation of many of the smaller program elements. For example, mothers are tested on their knowledge of terms used in sewing at the beginning of the sewing unit and again after completion of the unit. We expect final outcome to be dependent upon successful completion of the various program units.

Training process variables are also assessed. Thus, general project goals are converted into component goals. The means for the achievement of these component goals are described in curricula and manuals. Teachers follow these in their work with the mothers and the mothers make use of this information, in turn, in their ways of relating to their children. Each of these links is sampled by a variety of assessment procedures to permit an accurate description of the way in which program objectives are actually carried out. Data on these measures will be reported elsewhere.

Subjects

Fifty-three families with one-year-old babies entered the first year program. At the same time, 35 control families were enrolled. At the end of the first year, post-test data were available for 34 program and 28 control children.

Of the 27 families who entered the second year program, 17 remained for post-test and for the control group, 17 of 22 were available.

The high rate of attrition for all groups, approximately one-third, was due very largely to upward mobility of the parents. They left the low income areas in which the project was located to move into better houses and to accept better jobs. Some families returned to the Rio Grande Valley or Mexico.

Characteristics of the families for whom post-test evaluations are available are shown in Table 1. The drop-out families are not shown. Some significant differences appeared between Stay and Drop families, but no patterns were apparent.

As shown in Table 1, the families involved in the program show the following characteristics: relatively low education, low income, fathers are usually present, and the number of children per family is fairly high. Not shown in the table, but also important, is the fact that Spanish is the language spoken by most families. Only 27% are fluent in English.

Measures

Babies are administered the Bayley Scales of Infant Development upon entering the project. Mothers are interviewed in their homes on family characteristics and child rearing beliefs shortly thereafter. The home as a learning environment is assessed with Caldwell's HOME Inventory at about this time. Mother-child interaction is measured for two- and three-year-olds with the Maternal Interaction Structured Situation (MISS).[2] In this situation the mother is asked to teach her child using standard toys. The mother-child interaction is videotaped and scored by trained observers. Scoring is reliable at or above 80% level.

When children exit the program at age three, they receive the Stanford-Binet, and Palmer Concept Familiarity Index. Mothers and children again do the MISS. Mothers are also interviewed at home, and the HOME Inventory is administered.

Results

Not all of the data gathered on subjects are available for presentation at this time as the analysis process is still underway. Results are available for the post-test data on children completing the two different program components and for the mothers completing the second year program only.

The results for the children in the first year program are

shown in Table 2. The groups were not significantly different at pretesting. However, the post-test results are quite different. Neither group changed significantly on the Psychomotor Development Index (PDI), but the program children were significantly higher ($p<.01$) on the Mental Development Index (MDI). The control group children showed a tendency, not significant, toward lower Mental Development Index (MDI) scores and the post-test experimental versus control comparison showed the experimental group to be significantly higher.

The results of the child evaluations for the children who participated only in the second year program appear in Table 3.

There were no significant group differences on the Bayley pretest scores at approximately 24 months. At post-testing when the children were 30 months of age the Stanford-Binet IQs of the program children were significantly higher ($p<.01$) than those of the controls. Furthermore, on the Concept Familiarity Index, a criterion measure for the curriculum unit on concept training, the program children again achieved significantly ($p<.05$) higher scores.

The results for the mothers and their controls in the Center program on the Maternal Interaction Structured Situation (MISS) appear in Table 4. At the end of the program year the program

mothers on the Control dimension were significantly more autonomy granting and less intruding. On the Affection dimension, the program mothers were warmer and less neutral.

The measure of the home as a learning environment (HOME) administered post-only, yielded nonsignificant results for the second year group. However, the total score of 27.4 for the second year group. However, the total score of 27.4 for the program mothers and 22.2 for the controls was in the expected direction ($p < .10$); and the scores on HOME categories 4(Provision of Appropriate Play Materials) and 5(Maternal Involvement with the Child) were significantly different in the expected direction ($p < .05$).

Discussion

The results were in the expected direction and may be interpreted - demonstrating the effectiveness of the program. Taken by themselves, the results of the child testing for the second year group would not be particularly convincing evidence of an effective parent education program because the children were participants in a pleasant and stimulating nursery school program, and this in itself might have accounted for the child's differences. However, the results for their mothers on the MISS strongly suggest that they have been influenced by the program in ways that pertain to their child rearing practices. Furthermore, the Bayley results for the first year group children were also in the expected direction and here there is no nursery school program; the major training impact is on the mother.

The obtained results need to be viewed cautiously as indicators of program support for a number of reasons, First, the program's actual effectiveness cannot be evaluated short of the time when program children have participated in elementary school and their competence assessed at that time. The present results should be viewed as offering evidence of immediate program effects, but the real test of a parent education program is in the long-

range effects.

Second, the infant test evidence of change for the first year group must also be viewed with caution. The instability of infant tests, reviewed recently by Lewis and McGurk,[3] Rutter,[5] and Thomas[6] raise real questions about their use in program evaluation. Unfortunately, it is not that the tests are inferior to some alternative form of infant assessment; they may well be the best available. The problem is that infants perform in erratic, unreliable ways until at least three years of age, and prediction to later performances is weak or absent.

Third, we regard evidence of change in mother behavior as most important and are inclined to see the MISS differences as highly significant. Additional data from mother interviews are being processed to provide a broader range of maternal characteristics on which to base a thorough evaluation.

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TABLE 1

SUBJECT CHARACTERISTICS

Characteristic	Group			
	In-Home Program		Center Program	
	Experimental	Control	Experimental	Control
N	34	30	17	17
Father's Age	29.5	32.0	32.3	37.4
Mother's Age	27.2	28.3	29.6	33.0
Father's Education	6.5	8.7	7.6	6.8
Mother's Education	7.8	7.9	7.6	6.5
% Married	94	80	94	77
Number of Children	3.3	3.2	3.4	5.2
Per Capita Annual Income	$942	$1031	$891	$605
Mothers Employed	2	4	2	0

TABLE 2

TEST RESULTS FOR CHILDREN PARTICIPATING IN THE FIRST YEAR PROGRAM: MEANS AND SDs

	Group			
Measure	Experimental	Control	Difference	t
N	32	28		
Pre				
Age	13.3(2.6)	14.9(2.0)		
Bayley				
MDI	85.8(21.5)	89.6(22.9)	-3.8	-0.66
PDI	93.0(18.3)	99.5(17.2)	-6.5	-1.40
Post				
Age	22.6(1.6)	25.1(2.2)		
Bayley				
MDI	95.7(10.4)	88.6(12.7)	+7.1	2.36
				$p<.05$
PDI	96.3(11.7)	96.9(13.6)	-0.6	0.18
Pre-Post				
Change				
MDI	+9.9	-1.0		
t-test	3.1			
	$p<.01$			
PDI	+3.3	-2.6		
t-test	1.1			

TABLE 3

TEST RESULTS FOR CHILDREN PARTICIPATING

IN SECOND YEAR PROGRAM: MEANS AND SDs

	Group			
	Experimental	Control	Difference	t
Bayley				
N	16	16		
Age	24.3(2.0)	25.3(2.3)		
MDI	78.6(10.5)	82.6(15.5)	- 4.0	0.84
PDI	97.1(24.0)	97.6(26.9)	- 0.5	0.05
Stanford-Binet				
N	16	16		
Age	30.5(1.63)	31.0(1.51)		
IQ	97.9(6.38)	88.2(8.2)	+ 9.2	3.55
				$p<.01$
Concept Familiarity Index				
N	15	13		
% correct	64.1(9.8)	52.0(15.4)	+12.1	2.41
				$p<.05$

TABLE 4

MOTHER BEHAVIOR ON THE MATERNAL INTERACTION

STRUCTURED SITUATION: MEAN PERCENTAGES

IN CATEGORIES WITHIN DIMENSIONS

	Group		
Dimension	Second Year Program	Second Year Controls	t
N	16	14	
Control			
Autonomy Granting	46.1(9.3)	34.5(10.5)	3.15
			p<.004
Structuring	51.5(9.4)	57.0(8.9)	1.55
Intruding	2.0(1.25)	8.4(6.2)	3.85
			p<.001
Affection			
Warm	14.6(9.2)	4.4(4.3)	3.75
			p<.001
Neutral	77.8(10.0)	88.2(4.3)	3.54
			p<.002
Preoccupied	1.8(1.7)	2.4(2.7)	0.64
Irked	1.0(1.4)	1.8(2.7)	0.91