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THE DURHAM EDUCATION IMPROVEMENT PROGRAM, 1966-1967.

DURHAM EDUCATION IMPROVEMENT PROGRAM, N.C.

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THIS REPORT DESCRIBES THE DURHAM EDUCATIONAL IMPROVEMENT PROJECT (EIP) FOR DISADVANTAGED CHILDREN, WHICH WAS DEVELOPED THROUGH THE COOPERATIVE EFFORT OF A UNIVERSITY, TWO SOUTHERN SCHOOL DISTRICTS, A NEGRO COLLEGE, AND A COMMUNITY ACTION PROGRAM. EIP IS AN EXPERIMENTALLY DESIGNED MODEL SCHOOL SYSTEM WHICH PROVIDES LONGITUDINAL STIMULATION. BUILT INTO THE SYSTEM IS A COMPREHENSIVE EVALUATION PROGRAM. THE SYSTEM BEGINS WITH A PROJECT TO OBSERVE THE EARLY BEHAVIOR AND HEALTH OF INFANTS, AND INCLUDES A PRESCHOOL, UNGRADED PRIMARY GROUPS, AND A LABORATORY SCHOOL PLANNED FOR EXPERIMENTATION AND TEACHER TRAINING. A YOUTH PROGRAM FOR DISADVANTAGED ADOLESCENTS AND A PARENT PROGRAM ARE BUILT INTO THE SCHEME. THE PARTICIPANTS IN SUCH A MODEL SYSTEM WILL BE DRAWN FROM ONE COUNTY AND TWO CITY SCHOOLS. THIS REPORT EXAMINES THE EIP RESEARCH COMPONENT, THE CHARACTERISTICS OF THE POPULATION, SOME PRE- AND POSTTEST DATA ON THE PARTICIPATING CHILDREN, AND SOME FINDINGS FROM THE INFANT STUDY PHASE OF THE PROJECT. IT ALSO INCLUDES EXCERPTS FROM STUDIES ALREADY COMPLETED BY THE RESEARCH STAFF AND A DESCRIPTION OF THE WAYS IN WHICH HOUSEWIVES FROM THE COMMUNITY ARE USED AS EDUCATIONAL TECHNICIANS. (NH)

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Research

THE DURHAM EDUCATION IMPROVEMENT PROGRAM 1966-1967

THE DURHAM EDUCATION IMPROVEMENT PROGRAM

A Project of the Ford Foundation

Under the auspices of the Southern Association of Colleges and Schools whose Education Improvement Project is funded by the Ford and Danforth Foundations.

Jointly Administered by:

Duke University
North Carolina College
Durham City Schools
Durham County Schools
Operation Breakthrough, Inc.

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• **Centered at 2010 Campus Drive, Durham, N. C.**

Donald J. Stedman
Director of Research

" 'Research' is an ominous word. It sounds very grim. Actually, doing research is the most exciting and enjoyable enterprise I know . . . especially when children are the subjects.

Two years ago I had some real doubts about our ability to develop a workable method for studying the disadvantaged child, and about the feasibility of a field study of this size.

I think it is finally safe to say we are off the ground. That fact would be considerably more comforting if I could only forget what happened to General Custer."

Durham, August 1967

Contents

I. INTRODUCTION

Research Challenges Endless in Massive Study of Disadvantaged Children

When a major university, two southern school districts, a Negro college and a community action program get together to plan a new educational program, anything can happen. In fact, that's the whole idea.

The research challenges and opportunities inherent in such an interaction are endless. The resultant requirements for innovative research strategies—and the administration of those strategies—can represent a major gain for education.

EOA Paves the Way

By 1964 the Economic Opportunity Act, the North Carolina Fund (a foundation-supported, state-wide, anti-poverty program), and private enterprise had created a climate supportive of an attack on Durham's problems of poverty. Operation Breakthrough, Inc. (OBT), the community action agency, mobilized resources in an effort to uplift impoverished families through education and training. The activities of OBT and community health, education and welfare agencies focused mainly upon job training, creation of neighborhood centers, and adult health and educational programming. *There remained a need for an intensive innovative educational program meeting the needs of children of poverty.*

With the stimulating assistance of the Southern Association of Colleges and Schools and the supportive interest of the Ford Foundation's Fund for the Advancement of Education, the notion of an Education Improvement Program was born.

Model System Planned

The EIP plan called for the development, over a five-year period, of a model school system providing a longitudinal stimulation and evaluation program for a large number of culturally disadvantaged children at early and varied stages in their lives.

The model system included an Infant Evaluation Project providing systematic observation of early developmental behavior and health. A nursery school segment would stimulate and encourage early and successful use of communication, socialization and motor skills. A pre-school segment would focus upon school readiness, cognitive development and independence. A series of ungraded primary groups was planned to focus upon the early educational and developmental life of the school-age child. In addition, a laboratory school was planned to permit

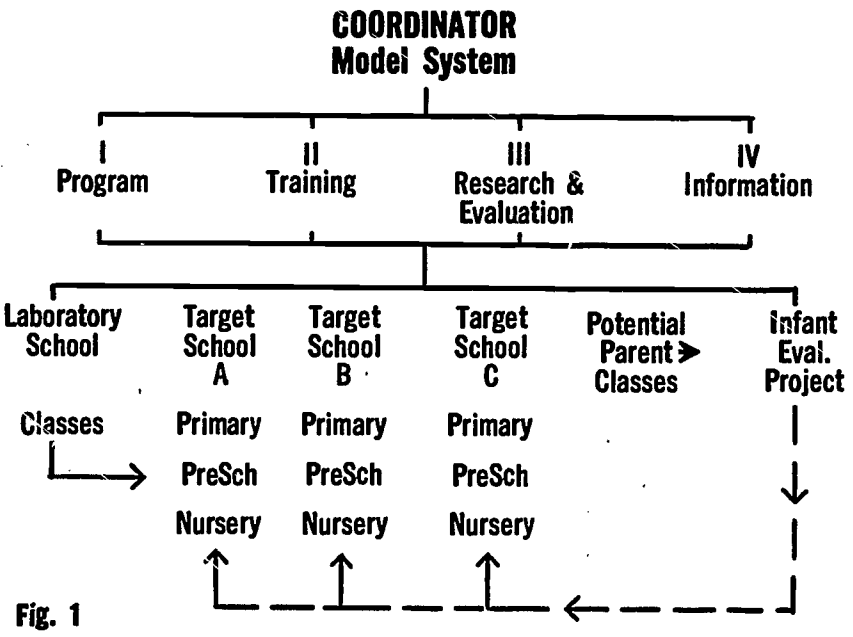

Fig. 1

program experimentation without unnecessary interruption in the model system, and to provide a base for teacher training.

In addition, an EIP Youth Program would involve disadvantaged early adolescents likely to become parents of *future* model system children. Finally, a program tailored to the needs of parents of children currently enrolled in EIP classes was mapped.

One county and two city schools were designated as "target schools." Children of these schools became the "target population." From these populations a sample of children was drawn in accordance with a predetermined phasing program leading to the ultimate development of the complete model system.

In the spring of 1965, the Ford Foundation made a grant of $2.9 million to finance, over a five-year period, the development of the model system outlined above. Responsibility for the new program was shared by Dur-

MODIFICATION OF EIP PHASING PLAN

School	Southside	Lakeview	Pearson	Edgemont	Total No. Of Class
Program Year					
I	5*	5	2		3
II	6 5	6 3	3 4	2 5	8
III	7 6 2	7 4	4 5	3 6	9
IV	8 7 3 4	8 5	5 6	4 7	10
V	8 4 5	6	6 7	5 8	8

Fig. 2

*Columns represent cohort groups. Start ages and ages at each year of the project are indicated in Arabic numerals.

ham city and county schools, Operation Breakthrough, North Carolina College, and Duke University.

The Education Improvement Program staff would consist of a director and specialists in program, research and evaluation, and information. Other staff would be added in number and kind required to carry out an effective program and research effort.

Three major goals were set for the fledgling program:

- The orderly development of a model system focusing heavily upon the preschool child, but allowing for transition into the early elementary years. (Entrance age and duration of involvement variables would be investigated.)
- Continuous conduct of curriculum and child development research. (The most relevant characteristics of the culturally disadvantaged population would be identified in an effort to enhance the effectiveness of innovation.)
- Development of an innovative program having implications for state and national efforts on behalf of the disadvantaged child.

In short, EIP would bear in mind the needs of all children, but focus most intently upon those whose meager environmental, social and developmental resources forecast a life of educational retardation, low motivation, unemployment and perhaps apathy and despair.

EIP's Basic Stance Outlined

First, Durham's disadvantaged youngsters are considered normal at birth and potentially normal academic achievers, though they are frequently subjected to conditions jeopardizing their physical and emotional health. It is further assumed that they adapt to their environment according to the same laws of learning which apply to all children.

Second, the assumption that the educative model (as opposed to the therapeutic model) will produce greater increases in social or academic competency underlies both program development and research efforts.

Third, Durham's disadvantaged children appear to come from environments reinforcing many behaviors not generally rewarded by middle class families. This "hidden curriculum" of the impoverished home tends to favor peer orientation and adult avoidance. These styles are observable, measurable and modifiable in these children in social and academic settings.

It is also assumed that the coping behaviors of culturally disadvantaged children are formed early in life. This means that early intervention is both desirable and necessary, if the adaptive and cognitive skills of the child are to be organized to meet the demands of a middle class culture. Such organization requires careful structuring of the physical, social and psychological environments, which, in turn, requires special training of teachers. These teachers may eventually become shapers of effective social, psychological and adaptive styles in preschool-aged children.

A final basic assumption is that it is possible to implement a program of style modification aiding in the development of a continuous process of accommodation and assimulation that will be reflected in the products of intellectual and adaptive activity, as well as in the qualitative aspects of cognitive development.

Average Income Below $5,000

Durham is a city of approximately 85,000; the remainder of Durham County has a population of approximately 35,000. Sixty-four percent of those living in the city are white; 36 percent are Negro. Sixty-eight percent of Durham County's population is white and 32 percent is Negro.

The 1960 census reports the average annual family income for both city and county residents at $4,876. Thirty-eight percent of the families of Durham County have an annual income of less than $4,000; 25 percent have an annual income of less than $3,000; and 14 per-

cent have an income of less than $2,000. Almost three-fourths of the nonwhite families in Durham have an annual income of less than $4,000. Over half of the nonwhite families receive less than $3,000 in annual income and almost a third receive incomes of less than $2,000 a year.

According to the same census, the median number of school years completed by persons living in the city is 9.9; outside the city, 9.6; and for the entire county, 9.8. The median for nonwhite is somewhat lower.

Almost half of the combined school population is Negro. It has been estimated that approximately a third of the city's school population is disadvantaged. There are 15,400 pupils enrolled in the Durham city schools, served by 680 teachers and principals.

In the Durham county schools there are approximately 1,000 Negro students who have been classified by their teachers as disadvantaged. This represents 39 percent of the total Negro enrollment. Currently, there are over 2,500 Negro students enrolled in the Durham county schools, representing one-fourth of the total school population of the county.

The three target schools were chosen because of their location in identified poverty areas. The laboratory school is in close proximity to the Duke University Campus. Durham is located near the "Research Triangle" of central North Carolina, approximately 20 miles northwest of Raleigh and 10 miles northeast of Chapel Hill.

Target Areas Sampled

A survey of neighborhood areas was made in an attempt to extract a representative sample of the three target areas for involvement in EIP nursery, preschool and elementary school groups. Infants for the Infant Evaluation Project were drawn from the three target school districts, as well as from the laboratory school area. The EIP Youth Program draws from two junior high schools in disadvantaged areas near the target schools.

II. RESEARCH

Component Stresses Internal Over External Evaluation/Special Studies

The Research and Evaluation Component carries responsibility for initiating special studies, general evaluation of program, measurement of impact upon the local educational community, and feed-back to Program and Information Components.

It was early agreed that EIP research would include a combination of external and internal evaluation of ongoing program, as well as initiation of special studies in one or another of four areas of research emphasis.

Experimental/control group designs are stressed less than studies of change along some dimension within small groups. Close observation in the learning setting and concern with the *learning process* are emphasized more than the *learned product.*

The task of evaluation is the collection of facts contributing to effective and productive program development and to a better understanding of the educational process considered optimal for this population.

Specific position statements with regard to EIP research strategies may be found in a report of discussions during the program's formative months by Drs. Robert L. Spaulding, Donald J. Stedman, and James J. Gallagher.

In order to fulfill the complicated requirements of a combined strategy of internal and external evaluation, three basic research sections were formed within the 31-man Research Component: General Evaluation, Special Studies, and the Infant Evaluation Project.

Consultants in research, school psychology, nursing, social work, pediatrics, data analysis and early childhood education were acquired on a full-time basis and provide continuous service to the research director and section heads.

The Research Component also trains research technicians at the sub-professional level and supervises post-doctoral research fellows in child development at the Center for the Study of Aging and Human Development at Duke University.

Additional demonstration, training and research functions relate variously to the two school systems and departments of Duke University and North Carolina College.

Longitudinal Infant Study Underway

The Infant Evaluation Project is primarily a monitoring and data gathering longitudinal study of the first 24 months of life of 36 culturally disadvantaged infants. A project coordinator and four infant evaluators man this study.

Infants are evaluated at one, two, three, six, nine, twelve, fifteen, eighteen, twenty-one and twenty-four months of age using measures of mental, motor and behavioral development, in addition to a variety of anthropometric measurements including head circumference, height, weight, and stem length.

Evaluations at the Pediatric Out-Patient Clinic of the Duke Medical Center occur within five days of each monthly anniversary of the infant. Longitudinal data are collected and interpreted in an effort to characterize the early developmental patterns of culturally disadvantaged infants. Thus differences between disadvantaged and nondisadvantaged infants may be detected and taken into account in development of health and early educational intervention programs.

The infant receives a full well-baby program, including immunizations. Pediatric, nutritional and child development consultation are given without charge to the families. An additional side effect is heightened interest and knowledge in health and child developmental factors on the part of mothers of enrolled babies. A staff social worker makes frequent visits to the home in an effort to chart the child's development and strengthen the family's relationship with the project. Polaroid pictures of the baby are taken at each evaluation and an extra copy is given to the mother. These photos are an effective motivational device.

Ten infant evaluations will be accomplished on each of the 36 infants over the first 24 months of their life. These will be completed by the spring of 1968.

"Ed Techs" Bolster Evaluation Staff

The General Evaluation Section consists of an evaluation coordinator, a school psychologist, two full-time research assistants, and eleven "on call" educational technicians. The educational technicians are "housewives" who agree to work 50 percent of an average week during the school year and who are trained in the individual administration of standardized psychological and educational measurements.

Evaluation activities are most intense during fall and

spring when a general evaluation of all EIP youngsters is accomplished. Individual assessments are made of each child's intelligence, social maturity, language age, motor development, educational readiness and academic achievement.

Data are collected and posted to individual progress charts for each child, then punched on IBM cards and stored on tape at Duke University's Computer Center. Fall and spring evaluation activities pose a complex coordination and in-service training problem involving a range of skilled and semi-skilled personnel, use of a mobile testing laboratory, and continuous consultation of a data processing manager.

Data are used in pre- and post-test methods to measure gains along various dimensions from fall to spring of each program year, and to provide a pool of basic data from standardized measures from which special studies can be accomplished. In addition, these fall and spring evaluations result in individual referrals for psychological, psychiatric, pediatric and educational consultation.

During the winter, educational technicians are assigned to individual special studies as research assistants, or are involved in in-service training in preparation for the next evaluation. General Evaluation staff is sharply reduced over the summer months and reactivated in the early fall.

Special Studies Made in Four Areas

The Special Studies Section is comprised of a chief research assistant, research consultants, and eight full-time, highly-skilled research technicians assigned to one or a combination of on-going special studies according to priorities set by the research director.

These special studies generally fall into one or more of the four areas of EIP's research emphasis: characteristics of culturally disadvantaged children; individual case studies in behavior modification; studies in curriculum development and classroom behavior analysis; and study of EIP program impact.

A special studies committee consisting of the research director, special studies consultant, data manager, chief research assistant, program director, and the EIP director reviews proposals for special studies originating with staff investigators or other qualified researchers.

Each special study proposal is reviewed from the standpoints of design quality; relevance to the four areas of research emphasis; and budget, space and personnel requirements.

If appropriate, the study is assigned the required number of research assistants and the necessary budget, and is phased into the special study program. During the second program year there was an average of twelve special studies underway at any one time.

Each study has a principal investigator responsible for personnel, planning, acquisition of the data or information, analysis, reporting, publication, and communication of study results to Program and Information Components. Data are routinely reported through the data manager who is responsible for development and maintenance of a data bank in connection with the Duke University Computer Center. Studies requiring subjects outside the EIP system, either as experimental or control groups, are coordinated through the General Evaluation Section. Studies requiring simply the manipulation of data already in the data bank are subject to the same review and are coordinated with the data manager.

Responsibility for coordination of the three major sections—and operations within and among them—rests with the research director.

PERT Maximizes Productivity

The Program Evaluation Review Technique (PERT) has been adapted for use within the EIP Research Component to permit a higher level of organizational efficiency and research productivity. Since a maximum amount of quality research must be accomplished by the Special Study Section over a short, five-year period, application of systems management techniques and close review of

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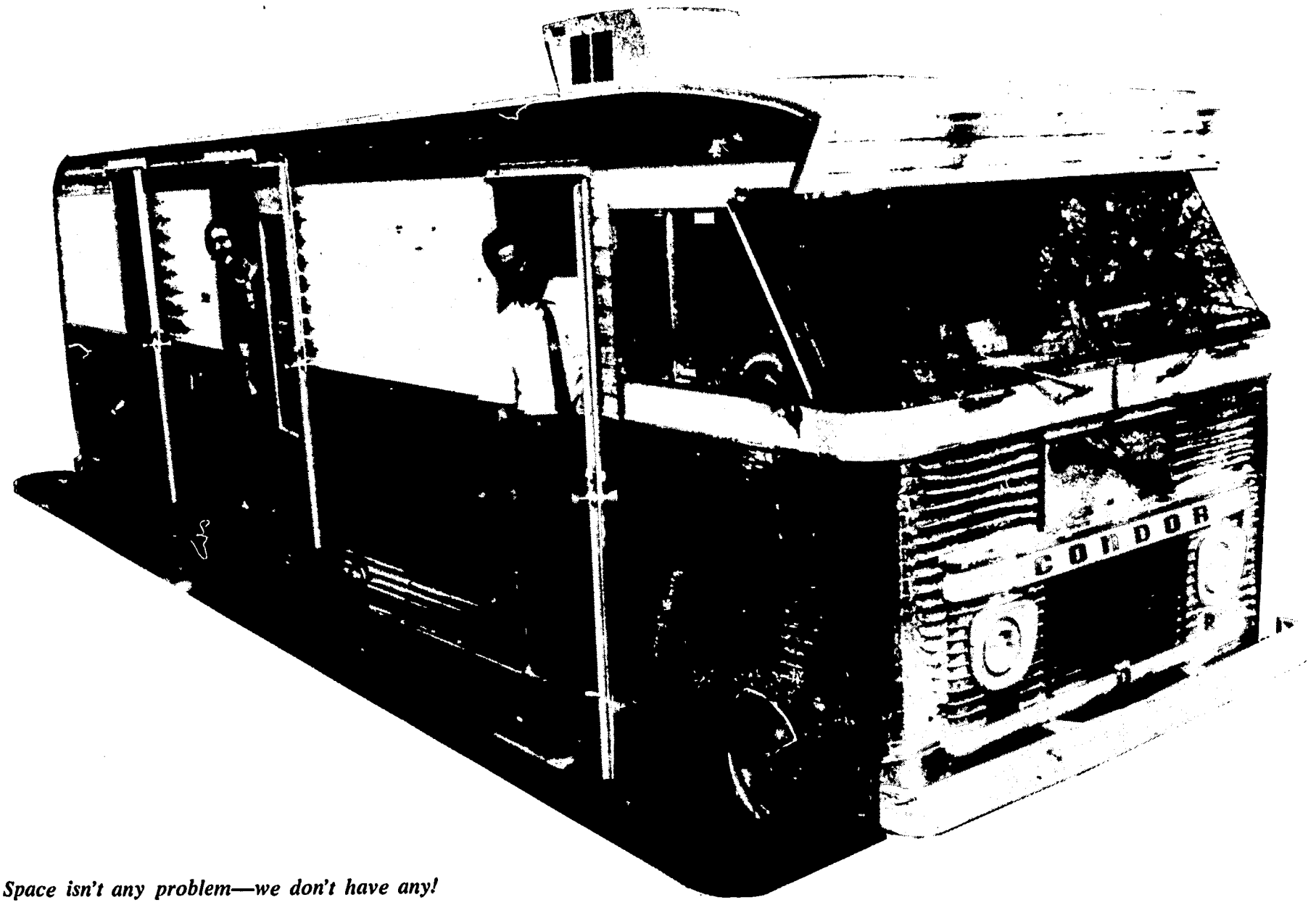
proposed special studies optimize both research quantity and quality.

The planning and sequencing of special studies with general evaluation and the longitudinal infant study also optimize the possibility of feeding interpreted data immediately into Program and Information Components. This avoids unnecessary delay in feeding back research findings into program and teacher training efforts.



Space isn't any problem—we don't have any!

To help solve the space problem, EIP purchased a Condor commercial unit and had it equipped as a testing mobile. The 26 foot van, which is heated and air conditioned, contains three testing rooms.

III. CHILDREN/FAMILIES

Data Characterize EIP Populations

The EIP social work staff and educational and research technicians of the Research Component, gather data on EIP families and children. Such demographic data help to characterize the population with which EIP works and to provide information on the families sending children into the educational groups, the Infant Evaluation Project and the EIP-Youth program.

Data important to the characterization of EIP families and the program itself includes: mean ages of mothers and fathers, mean educational levels of mothers and fathers, occupations of parents (including job stability), number of persons in household, mean income level of parents, and information concerning home ownership, home condition, and integrity of the family.

Table 1 presents mean data on these characteristics for 198 EIP families. In general, mean family income levels fall at or near the poverty level. In a significant number of families both parents are working. Occupation ratings are presented from the Warner Scale and job stability ratings are based on a four-point scale consistent with Labor Department employment stability rating. Home condition ratings are based on a five-point scale of dilapidation.

Table 2 presents characteristics of EIP children. The 198 children in the eight groups for whom school program was provided during 1966-67, the infant group and the two EIP-Youth groups are presented with regard to their mean age, sex, race, religious affiliation of parents, mean number of brothers and sisters, mean ordinal position of children in their family, and percent of illegitimacy in the groups characterized.

This table provides sufficient characterization of EIP children for a comparison with other research and program activities with disadvantaged children and offers a basis for the interpretation of special studies and general evaluation data presented later in the report.

For EIP Program Year III (1967-68), all these children will proceed to the next year level within EIP. Eight to ten infants from the Infant Evaluation Project will "graduate" into a two-year-old nursery program at the laboratory school. Fifty-six control group children have been identified for comparative studies with EIP children at each level and available data (though not presented here) indicate that they share characteristics of EIP children.

CHARACTERISTICS OF EIP FAMILIES — Table 1

EIP Population Preschool and Primary	N	$\bar{x}$ AGE		$\bar{x}$ EDUCATION			$\bar{x}$ OCCUPATION		$\bar{x}$ JOB STABILITY								
		Mother	Father	Mother	Father	% Mother Working	Mother	Father	Mother	Father	$\bar{x}$ Number in House	$\bar{x}$ Income	% Primarily Mother Supported*	% Home Owners	$\bar{x}$ Home Condition	% Intact Families	% With Older Brothers
School A																	
Nursery (3)	11	30	35	11	11	91	6	6	1	1	6	3982	18	0	3.27	46	55
Nursery (4)	16	29	33	10	10	44	6	6	2	1	7	3375	31	6	3.25	94	56
School B																	
Nursery (2)	10	24	21	9	9	10	6	6	2	2	7	2958	0	0	2.90	90	80
Kindergarten	12	35	29	9	8	33	6	6	2	1	7	3194	8	0	2.33	58	58
School C																	
Nursery (3)	12	32	35	10	9	91	6	5	1	1	8	4573	0	50	2.75	83	75
Primary	25	33	38	9	9	78	6	5	1	1	8	4730	12	56	2.60	76	80
Laboratory																	
Kindergarten	14	30	37	9	7	75	5	5	2	2	6	4428	29	0	3.36	100	50
Primary	29	33	38	10	9	66	5	5	2	2	6	6252	35	3	2.59	90	59
INFANT	32	26	30	11	10	16	5	6	1	1	6	3526	0	13	3.34	100	53
YOUTH																	
School 1	15	40	42	9	8	40	6	5	1	2	5	3460	7	13	3.40	87	60
School 2	22	38	35	9	8	48	6	6	1	1	7	3510	5	18	3.18	59	46
TOTAL	198	32	34	10	9	54	6	6	1	1	6	4227	14	16	2.99	82	60

*50% OR MORE OF TOTAL FAMILY INCOME

CHARACTERISTICS OF EIP CHILDREN

Table 2

EIP Population Preschool and Primary	(June, 1967)								
	N	Mean Age	Sex % M/F	Race % W/N	% Protestant	Mean Siblings	$\bar{x}$ Sister $\bar{x}$ Brother	$\bar{x}$ Ordinal Position	% Illegitimate
School A									
Nursery (3)	11	3.90	45/55	0/100	100	3	1.36/1.45	3	27
Nursery (4)	16	5.19	44/56	0/100	100	5	2.31/2.50	4	31
School B									
Nursery (2)	10	3.07	50/50	40/60	100	4	2.60/1.80	5	0
Kindergarten	12	6.06	58/42	42/58	100	4	2.17/2.00	4	8
School C									
Nursery (3)	12	4.15	50/50	0/100	100	4	1.67/2.17	4	8
Primary	25	7.13	44/56	0/100	100	5	2.21/6.36	4	4
Laboratory									
Kindergarten	14	5.97	57/43	57/43	100	3	1.85/8.43	3	0
Primary	29	7.19	55/45	83/17	83	3	1.55/4.41	3	0
INFANT	32	1.43	50/50	9/91	100	2	1.25/.94	3	0
YOUTH									
School 1	15	14.33	60/40	100/0	93	3	1.40/2.07	3	0
School 2	22	13.82	59/41	0/100	100	4	1.59/2.77	5	23
TOTAL	198	6.64	52/48	30/70	97	4	1.81/2.85	4	8

IV. EVALUATION

Pre- Post-Test Data Presented

Data from evaluation of the EIP children in the fall of 1965, the spring of 1966, the fall of 1966, and the spring of 1967 are available to various extents (depending upon whether a given test was administered) and are presented in the tables following:

The Wechsler Intelligence Scale for Children (WISC) was administered to the ungraded primary groups, a small control group, EIP-Youth Program enrollees and a comparison control group for each group in the youth program.

Mean intelligence quotient data are presented along with standard deviations for boys and girls, both Negro and white. Mean verbal IQ's, mean performance IQ's, and mean full-scale IQ's are presented from both fall and spring evaluations of Program Year II (Table 1).

Table 2 presents the results of Stanford-Binet intelligence testing for Program Years I and II by group where applicable.

Mean IQ's and standard deviations are presented by age level, by sex, by race.

Table 3 presents IQ data from individual administration of the Peabody Picture Vocabulary Test (Forms A and B) for Program Years I and II by age group where applicable, and by sex and race. Tables include mean IQ's and standard deviations.

Results of group achievement tests are not presented here, but are currently undergoing evaluation for presentation in a special study. Results of sensory screening evaluations are not presented, nor are the results of social maturity tests administered to mothers by EIP social workers.

It was felt that the presentation of intelligence test data was of prime importance, and that it was too early to adequately interpret the meaning of achievement test data or the value of the sensory evaluation program as a screening method.

WISC PROGRAM YEAR II

Table 1

		FALL 66						SPRING 67					
PRIMARY		N	Verbal IQ		Perform. IQ		Full IQ		N	Verbal IQ		Perform. IQ		Full IQ	
			X	Sd	X	Sd	X	Sd		X	Sd	X	Sd	X	Sd
Ungraded Primary School C	Boys	11	94.00	7.07	87.18	8.11	89.82	7.14	11	95.64	7.45	92.82	14.15	93.82	10.03
	Girls	14	98.57	13.25	95.14	16.43	96.64	14.46	13	106.00	10.48	105.62	16.28	106.31	13.56
	Negro	25	96.56	11.01	91.64	13.78	93.64	12.10	24	101.25	10.45	99.75	16.36	100.58	13.42
	White	0							0						
Ungraded Primary Laboratory School	Boys	15	100.80	16.33	99.73	14.40	100.60	15.86	14	104.86	15.17	105.07	11.43	105.00	13.19
	Girls	13	93.92	14.12	98.38	16.43	95.54	14.62	13	99.31	13.71	104.92	14.23	102.15	13.68
	Negro	5	83.40	9.53	91.00	15.18	85.80	9.50	5	95.40	11.76	100.00	12.88	97.40	11.78
	White	23	100.70	14.87	100.87	14.82	100.96	15.02	22	103.73	14.83	106.14	12.56	105.04	13.39
Control Group	Boys								6	92.83	8.52	88.83	8.91	89.83	8.23
	Girls								7	86.57	13.78	85.00	12.70	84.57	11.21
YOUTH GROUP #1 Youth	Boys								8	94.75	14.88	92.63	13.50	93.25	12.98
	Girls								6	99.17	9.41	94.83	8.45	96.83	8.86
	Negro								0						
	White								14	96.64	12.59	93.57	11.26	94.79	11.15
#1 Youth Control Group	Boys								3	109.67	.58	106.00	12.29	108.67	5.69
	Girls								3	92.00	13.00	87.67	24.01	88.00	20.81
	Negro								0						
	White								6	100.83	12.70	96.83	19.79	98.33	17.73
#2 Youth	Boys								12	86.00	9.11	82.50	9.74	82.83	9.27
	Girls								9	88.78	10.45	82.89	14.88	84.56	12.34
	Negro								21	87.19	9.55	82.67	11.86	83.57	10.44
	White								0						
#2 Youth Control Group	Boys								5	82.20	3.96	84.40	5.13	80.80	3.03
	Girls								5	78.80	11.95	65.60	9.13	70.00	10.77
	Negro								10	80.50	8.58	75.00	12.12	75.40	9.38
	White								0						

Now underway are studies of error patterns from the PPVT data, a factor analysis of the WISC data and an evaluation of performance and error patterns on the results of the Columbia Mental Maturity Scale administrations.

STAN-BINET

Table 2

COHORT GROUP Year II		PROGRAM YEAR I						PROGRAM YEAR II					
		Fall 65			Spring 66			Fall 66			Spring 67		
		N	IQ X	IQ Sd	N	IQ X	IQ Sd	N	IQ X	IQ Sd	N	IQ X	IQ Sd
Two Year Olds School B	Boys							4	99.50	9.15	4	92.50	16.36
	Girls							5	110.60	14.84	5	105.20	14.08
	Negro							6	108.33	13.75	6	100.83	8.45
	White							3	100.33	12.90	3	97.00	28.00
Two Year Olds (Control Group)	Boys										2	100.00	12.73
	Girls										2	102.00	7.07
	Negro										2	103.00	8.49
	White										2	99.00	11.31
Three Year Olds School A	Boys				2	84.50	2.12				4	99.25	4.11
	Girls				4	88.25	12.53				6	95.83	16.96
	Negro				6	87.00	9.94				10	97.20	12.99
	White				0						0		
Three Year Olds School C	Boys										6	103.00	7.40
	Girls										6	97.00	15.09
	Negro										12	100.00	11.76
	White										0		
Three Year Olds (Control Group)	Boys										3	75.67	5.51
	Girls										3	85.33	7.09
	Negro										6	80.50	7.77
	White										0		
Four Year Olds School A	Boys										6	95.50	16.45
	Girls										9	90.33	14.00
	Negro										15	92.40	14.68
	White										0		
Four Year Olds (Control Group)	Boys										4	80.25	7.93
	Girls										4	67.50	6.03
	Negro										8	73.88	9.43
	White										0		
Five Year Olds School B	Boys										7	87.00	5.92
	Girls										5	87.60	9.24
	Negro										7	85.43	8.22
	White										5	89.80	4.76
Five Year Olds Laboratory School	Boys										5	94.60	10.24
	Girls										6	91.67	13.40
	Negro										5	85.20	8.76
	White										6	99.50	9.75
Five Year Olds (Control Group)	Boys										4	81.25	17.59
	Girls										3	73.00	4.36
	Negro										3	77.00	11.17
	White										4	78.67	18.17
Ungraded Primary Laboratory School	Boys	6	92.17	11.25	6	97.67	10.19						
	Girls	5	94.40	11.06	5	94.80	8.35						
	Negro	4	85.25	12.31	4	90.75	10.84						
	White	7	97.71	6.90	7	99.57	6.70						
Ungraded Primary School C	Boys	10	86.40	12.63	10	87.80	9.25						
	Girls	9	94.22	9.81	9	97.44	11.36						
	Negro	19	90.10	11.78	19	92.37	11.16						
	White	0			0								

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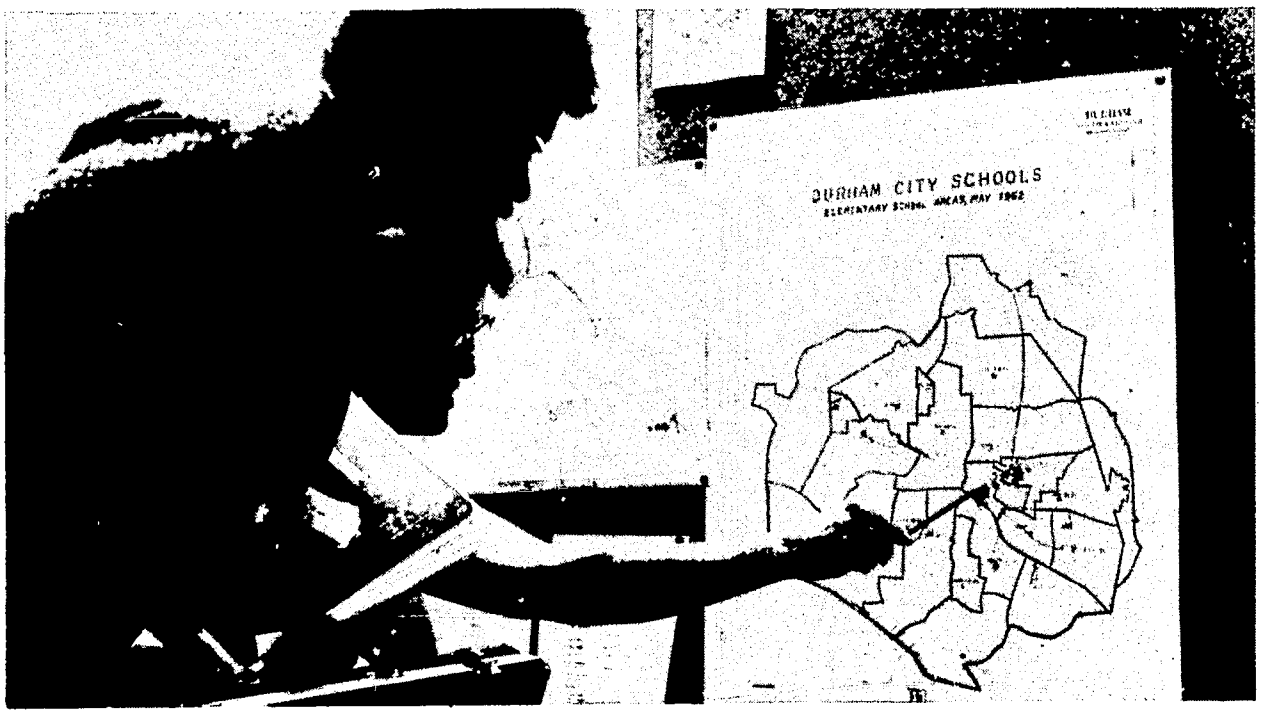
Table 3

COHORT GROUP Year II		PROGRAM YEAR I							PROGRAM YEAR II						
		Fall 65			Spring 66				Fall 66				Spring 67		
		N	Form A IQ X	Form A IQ Sd	Form B IQ X	Form B IQ Sd	N	Form A IQ X	Form A IQ Sd	Form B IQ X	Form B IQ Sd	N	Form A IQ X	Form A IQ Sd	Form B IQ X	Form B IQ Sd
Two Year Olds School B	Boys											4			93.25	12.61
	Girls											5			98.20	10.23
	Negro											6			94.67	11.25
	White											3			98.67	11.93
Three Year Olds School A	Boys											4			93.25	16.28
	Girls											4			94.50	12.40
	Negro											8			93.88	13.41
	White											0				
Three Year Olds School C	Boys											6			95.00	16.00
	Girls											5			83.80	8.67
	Negro											11			89.91	13.87
	White											0				
Four Year Olds School A	Boys											6			88.17	12.92
	Girls											8			76.88	11.43
	Negro											14			81.71	12.97
	White											0				
Five Year Olds School B	Boys											7			90.43	11.33
	Girls											5			81.00	14.47
	Negro											7			84.43	16.13
	White											5			89.40	7.64
Five Year Olds Laboratory School	Boys											6			80.83	14.50
	Girls											6			86.67	16.60
	Negro											5			74.50	11.55
	White											7			93.00	12.93
Ungraded Primary School C	Boys	9	90.22	20.34			10			73.30	22.47	11			89.27	16.57
	Girls	9	92.44	19.48			9			80.56	14.15	14			89.79	15.10
	Negro	18	91.33	19.35			19			76.74	18.85	25			89.56	15.43
	White	0					0					0				
Ungraded Primary Laboratory School	Boys	6	96.50	12.69			7			87.57	17.67	15			101.33	14.71
	Girls	5	91.00	12.35			5			97.00	24.71	13			96.00	15.17
	Negro	4	83.25	5.44			4			74.50	17.60	5			87.40	16.09
	White	7	100.14	10.67			8			100.00	16.53	23			101.35	13.74



Staff members became well acquainted with Durham's geography while surveying "target areas."

V. INFANT PROJECT

Study Yields Data on Thirty-Six Babies

Infants in the longitudinal study of EIP are evaluated at the first, second, third, sixth, ninth, twelfth, fifteen, eighteenth, twenty-first and twenty-fourth months, with regard to developmental intelligence, motor development, behavioral development, and a variety of anthropometric measurements.

Table 1 presents mean developmental intelligence quotients (DIQ), developmental motor quotients (DMQ), height, weight, and head circumference for both boys and girls for each evaluation from one through fifteen months. Data are current to May 15, 1967.

These data are acquired by individual evaluation of each child at the age levels indicated. The Bayley Scales of Infant Development including the DIQ, DMQ and the Infant Behavior Profile were used in their current state of standardization. Raw scores were converted to mental or motor age levels in accordance with currently available matrices for conversion. The data presented are subject to minor modification pending the final standardization of the Bayley Scales. In any case, they provide an adequate method for tracking the development of infants and comparing them with other populations where the same instrument is used, and for making judgments within the project of boy vs. girl and evaluation level vs. evaluation level. More specific studies are presented in the special studies section of this report.

MEAN DIQ's, DMQ's, HEIGHT, WEIGHT, AND HEAD CIRCUMFERENCES FOR INFANT PROJECT SS BY EVALUATION

Table 1

Eval.	N		DIQ			DMQ			Height Cm.			Weight—Lbs.			Head Circum.		
	B	G	Boys	Girls	Both	Boys	Girls	Both	Boys	Girls	Both	Boys	Girls	Both	Boys	Girls	Both
1 mon.	16	16	104.63	99.44	102.03	112.00	111.44	111.72	52.06	51.44	51.75	8.80	8.30	8.55	36.91	36.58	36.74
2 mon.	16	16	117.94	115.19	116.56	120.88	119.94	120.41	55.84	54.92	55.38	11.26	10.06	10.66	39.59	38.31	38.95
3 mon.	15	15	115.93	116.67	116.30	115.40	123.40	119.40	59.17	58.10	58.63	13.55	11.87	12.71	40.50	39.70	40.10
6 mon.	15	15	106.67	102.73	104.70	110.27	107.33	108.80	66.47	65.00	65.73	18.41	15.98	17.19	43.38	42.68	43.04
9 mon.	15	15	109.93	113.27	111.60	110.47	108.40	109.43	71.40	69.96	70.71	21.35	18.54	19.94	43.30	44.44	43.85
12 mon.	14	13	110.71	108.15	109.48	104.50	103.85	104.19	75.32	73.29	74.34	23.64	20.64	22.19	45.88	45.54	45.71
15 mon.	7	9	112.86	110.56	111.56	107.57	111.22	109.63	78.64	76.50	77.44	24.57	22.72	23.53	47.33	46.36	46.75

VI. SPECIAL STUDIES

Individual and Group Change Tracked Along Many Dimensions

Special Studies during Program Years I and II were carried out primarily in the areas of general characteristics of disadvantaged children, individual case studies in behavior modification, teacher/child classroom interactions, curriculum development, and infant longitudinal studies. Insofar as possible, special studies are designed to yield information for curriculum development and cast light on the possible differences in behavior and learning patterns between disadvantaged and non-disadvantaged children.

The following are brief reports of special studies accomplished thus far.

Disadvantaged Children Characterized

1. **A Comparative Study of Failure Avoidance in Culturally Disadvantaged and Non-Disadvantaged First Grade Children**
   (Donald J. Stedman and Patricia G. Webbink)

Twenty-four non-culturally disadvantaged and 20 culturally disadvantaged first grade children were given two puzzles to assemble under stress of time limit. The children were allowed to complete one puzzle successfully. Failure was induced by calling time before they completed the second. After an interim period, each child was asked to choose which of the puzzles he would like to repeat. As predicted, the disadvantaged children's repetition choice was significantly directed toward previously successful puzzles, demonstrating failure avoidance or low achievement motivation. Non-disadvantaged children did not select between incompleted and completed puzzles above chance level, but choose the incompleted task significantly more often and completed puzzles significantly less often than the disadvantaged children. This was interpreted as upholding the predicted success striving of the non-disadvantaged child as compared to the disadvantaged child.

The data were considered to have upheld the hypothesis generated concerning higher states of achievement motivation in non-disadvantaged children as compared to disadvantaged children. In addition, the capability of measurement of the achievement motivation state was thought to be demonstrated by means of a repetition choice task involving children's puzzles.

2. **The Social Maturity of Disadvantaged Children**
   (James J. Gallagher, Anne Funderburk and Teresa Leonhardt)

This study explored the relationship between measured intelligence and social maturity in primary-aged, disadvantaged children. While general findings have shown relatively superior social maturity scores to general intelligence scores in these children, this study indicated that such results might be spurious and misleading. The children showed strong deficits in two specific areas of social maturity—language development and freedom to explore environment. These results suggest the pattern of successes and failures in general social maturity scores has little meaning for educational and social planning.

3. **Modification of Immediate and Delay Gratification Patterns of Disadvantaged Primary School Children Through Imitation**
   (Sally Sibley, Patricia Barton and Teresa Leonhardt)

The tendency to postpone gratification in order to obtain a more highly valued object or goal has long been considered a basic component of maturity and self-control. This behavioral pattern is particularly reinforced by middle class cultural standards. It has been reliably determined that self-imposed delay of gratification in favor of more valuable gains is a relatively stable pattern of behavior which can be modified by direct training, by increasing the certainty of the delay reward, and by decreasing the delay interval.

This study, carried out with EIP six-year-olds, is a partial replication of a 1965 investigation by Bandura and Mischel. Modifications from the original study include the change in population, addition of race as a variable, decrease in the delay time from weeks to one day, and substitution of a taped model for the written one. The latter two changes were made to adapt the procedure to a new population.

Seventy-two disadvantaged children, equally divided by race and sex, who displayed distinctly high and low delayed gratification patterns on a pre-test, were assigned to one of three treatment conditions. One group observed a live model (white, female) who exhibited a delay of gratification pattern opposed to the child's initial tendencies; another third of the children were exposed to a video-

audio tape of the same model displaying the opposite delay pattern of the child; a final group had no exposure to models. The delay preference test was again administered after the experimental treatment when the model had left. Subjects were readministered the test for delayed gratification two weeks after the experimental treatment, in order to assess stability and generalization of the effects.

Data are presented in Fig 1. The means of each treatment group at each test administration are presented.

4. The Attitudes of Disadvantaged Youth

(Howard Lee, Anne Funderburk, Teresa Leonhardt, Maurine LaBarre and Clyde Penny)

This project spent considerable time and effort on methodology and procedures needed to provide an interview schedule capable of extracting useful information concerning attitudes, aspirations, and goals from disadvantaged youth. A series of structured interviews were developed for administration to EIP Youth Program membership to establish initial data on these dimensions so important to adult adjustment.

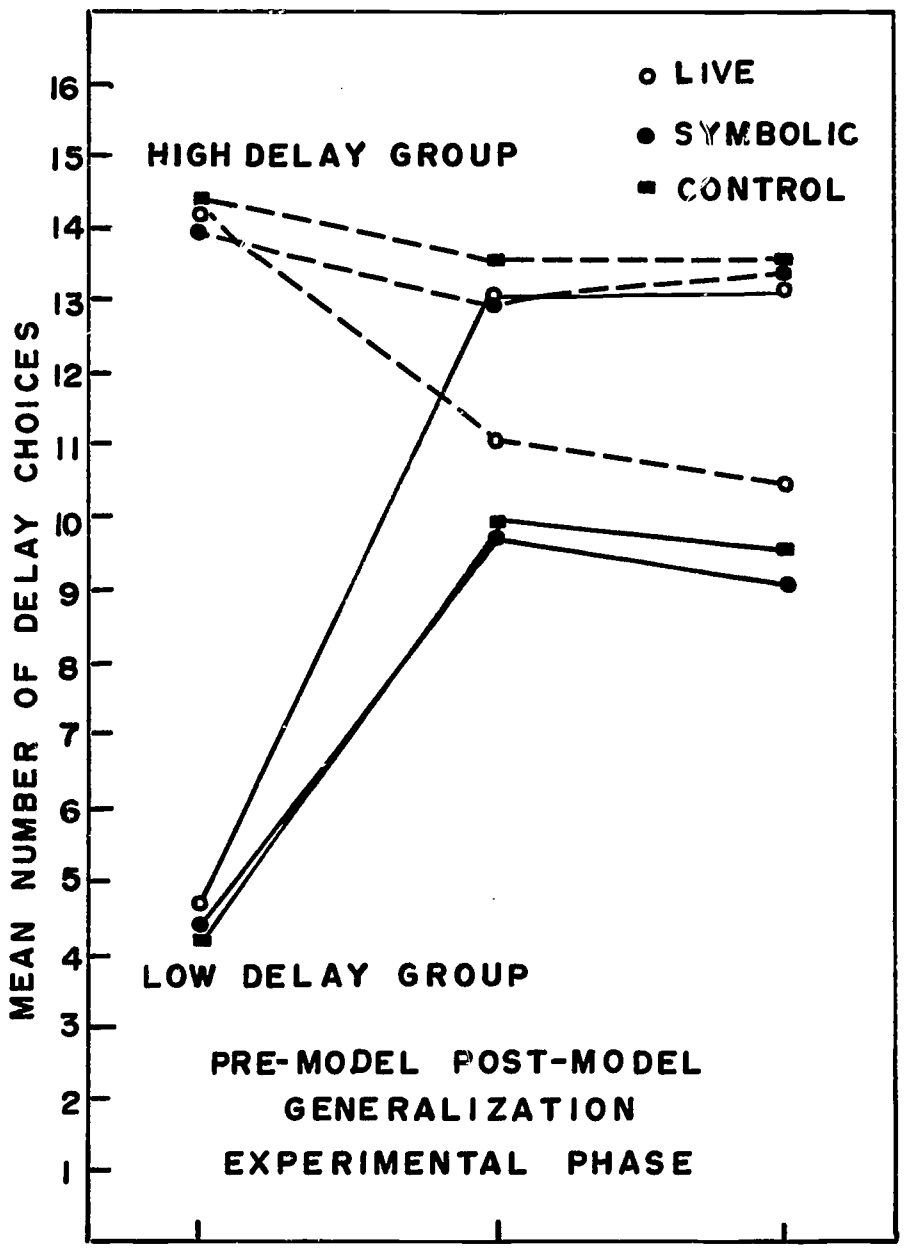


Fig. 1. Mean number of delayed gratification choices for pre-model low and high delay groups as function of live model, symbolic model, or no model.

5. A Comparison of Parent and Teacher Ratings on the Preschool Attainment Record of 17 Six-Year-Old Disadvantaged Children

(Donald J. Stedman, Miriam Clifford and Anne Spitznagel)

Seventeen six-year-old boys and girls of average intelligence were evaluated via the Preschool Attainment Record by both mother and teacher. A comparison of attainment quotients suggested a significant discrepancy between parents and teachers on boys' developmental levels (parents scoring boys higher than teachers do), but no differences were found in judgments of girls' developmental levels. It was suggested that the reasons for disagreement between parents and teachers on boys' attainment should be pursued with particular attention paid to the areas of rapport, manipulation, communication, and creativity, which seem to be the areas in which parents and teachers disagree most in their evaluation of boys' developmental levels (See Table 1).

Thirty-Six Babies Followed

6. Thirty-six Infants in Poverty

(Donald J. Stedman, Maurine LaBarre, Lorette Powell, Judy Simpson, Barbara Kerton, Tempa Pickard and Patricia Jones)

This is a comprehensive description of home situations, family conditions, developmental data, and vignettes from social work visitations accumulated on the 36 families who have infants in the longitudinal Infant Evaluation Project.

It provides fuller insight into the social and familial factors surrounding the early developmental life space of the infants under surveillance. Similarities and differences

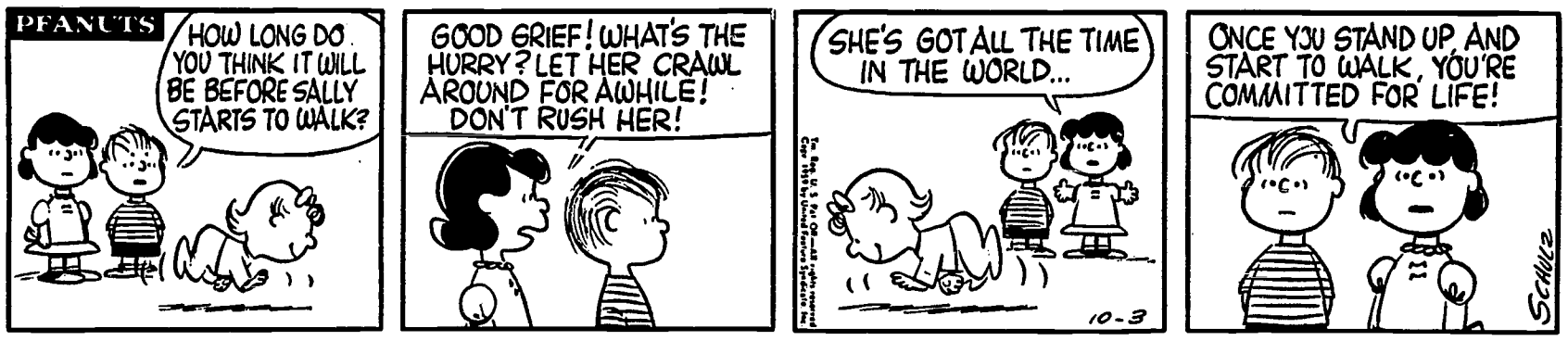
Table 1

MEAN SCORES ON THE PAR COMPARING PARENT AND TEACHER RESPONSES ON THE SAME CHILDREN

	Parent AQ	Teacher AQ	t $p <$
Boys (N-8)	106.25	94.25	.05
Girls (N-9)	104.33	101.55	.50
All (N-17)	105.17	98.7	.05

PEANUTS ●

By Charles M. Schulz



are drawn between white and Negro families, between rural and urban families and their living patterns, and between large and small families. Particular reference is made to the relatively high achievement motivations that the majority of these families have for their children.

7. Developmental-Behavioral Patterns of Twenty-six Culturally Disadvantaged Infants

(Donald J. Stedman, Patricia Jones, Barbara Kerton, Maurine LaBarre, Tempa Pickard, Lorette Powell and Judy Simpson)

This is an interim report on the developmental-behavioral patterns of 26 infants (14 boys and 12 girls) of the 36 culturally disadvantaged infants being followed in the longitudinal study of the Infant Evaluation Project.

Each child was evaluated individually in the presence of his mother at one, two, three and six months of age, using the Bayley Scale of Infant Mental and Motor Development and its Infant Behavior Profile. Developmental Intelligence Quotients (DIQ), Developmental Motor Quotients (DMQ), and Behavior Profile scores were derived at a point within five days of the monthly birth date of the infant at each of the four month levels by the same evaluator. The Infant Behavior Profiles were accomplished as a pooled judgment by the evaluator assigned to the infant and an observer who witnessed the evaluation of mental and motor skills through a one-way glass.

Since infants enter the study at different intervals, six month data are reported on 22 of the 26 infants, three month data on 25 of the 26, two month data on 25 of the 26, and one month data on all 26.

Table 2 indicates the Mean DIQs for the number of infants indicated at each month level and sex group. Table 3 includes the Mean DMQ data.

It is interesting to note that the boys start out at a relatively higher level compared to the mean DIQ of 100

Table 2
MEAN DIQ DATA OF TWENTY-SIX INFANTS BY SEX AND AGE AT EVALUATION

	AGE AT EVALUATION			
	1 Month	2 Months	3 Months	6 Months
BOYS	108	113	109	102
(N)	(14)	(13)	(13)	(11)
GIRLS	97	113	114	110
(N)	(12)	(12)	(12)	(11)
BOYS AND GIRLS	104	113	112	106
(N)	(26)	(25)	(25)	(22)

Table 3
MEAN DMQ DATA OF TWENTY-SIX INFANTS BY SEX AND AGE AT EVALUATION

	AGE AT EVALUATION			
	1 Month	2 Months	3 Months	6 Months
BOYS	117	121	113	108
(N)	(14)	(13)	(13)	(11)
GIRLS	117	115	113	104
(N)	(12)	(12)	(12)	(11)
BOYS AND GIRLS	117	118	113	106
(N)	(26)	(25)	(25)	(22)

and, after a short spurt at the second month level, drop near the mean by the sixth month evaluation. The girls, on the other hand, start below the mean at 97 and move quickly at the second month evaluation into a position approximately one standard deviation above the mean. They hold that position through the sixth month evaluation.

DMQ data suggests that both boys and girls start out considerably above the mean of the standardization sample and drop toward the mean as age progresses. There is a slight increase from the first to the second month for

the boys but it joins the level of the girls' performance by the third month. By the sixth month these infants are approaching the mean of the distribution. The boys appear to be slightly more active and are more productive on the motor scales, while the girls are more productive and appear to be more capable on the developmental intelligence scales.

A review of the Behavior Profile data suggests that there is an increase across the first six month life span in response to objects, goal directedness, persistence, cooperativeness, happiness, endurance, looking, listening, banging with hands, manipulating, and mouthing. The areas in which decreases take place across the six-month period are energy level, tension, fearfulness, vocalization, and body motion.

The data indicated average to above average mental and motor quotients and "normal" early behavioral patterns. Since older disadvantaged children perform at subnormal levels on standardized tests, it was noted that these data may serve to "bracket" the second and third years of life as critical to the development of patterns related to intellectual development.

8. A Comparative Study of Developmental Patterns of Disadvantaged Infants in Kingston, Jamaica, and Durham, North Carolina

(Barbara Kerton and Donald J. Stedman)

Sixty-two infants, aged nine to fifteen months from Durham, N. C. and from Kingston, Jamaica, were evaluated with the Bayley Infant Development Scales. Jamaican infants were evaluated in the Pediatric Clinic of the Medical Center of the University of the West Indies. Durham infants were part of the longitudinal study of the Durham Education Improvement Program.

A comparison of 31 pairs of age- and sex-matched infants was performed to study the differential development levels of two disadvantaged populations in different geographic areas with differing cultural backgrounds.

Table 4 indicates significantly different developmental

Table 4

MEAN DIQ AND DMQ SCORES OF 31 DURHAM, NORTH CAROLINA AND KINGSTON, JAMAICA DISADVANTAGED INFANTS

	DIQ			DMQ		
	Boys	Girls	All	Boys	Girls	All
Durham (EIP)	109.93	109.31	109.61	107.80	103.38	105.52
Kingston, Jamaica	102.33	104.56	103.48	108.67	112.38	110.58
$p <$			.01			.18

Table 5

MEAN DIQ (AND DMQ) SCORES OF DURHAM, NORTH CAROLINA AND KINGSTON, JAMAICA INFANTS BY AGE

		Durham		Kingston		N
Mos.	Sex	DIQ	(DMQ)	DIQ	(DMQ)	
9	B	110	(109)	105	(113)	6
	G	108	(98)	98	(114)	5
12	B	111	(109)	104	(104)	6
	G	106	(104)	108	(107)	8
15	B	106	(105)	93	(110)	3
	G	121	(112)	107	(124)	3
					Total N=	31

intelligence quotients when the two populations are compared—the Durham infants being generally higher in intellectual development. On the other hand, there was a trend in favor of superior motor development in the Jamaican infant group. Table 5 indicates Mean DIQ and DMQ scores of both groups by age level, and indicates the largest DIQ discrepancy among the boys between groups is at the 15-month level, as it is for the girls. Motor developmental levels appear to be most discrepant between the groups of girls at the 9- and 15-month levels.

The remarkable fact is that both groups score at or above the average level on both intellectual and motor developmental evaluations at all levels. Comparative evaluations of height, weight, stem length and head circumference were also accomplished so anthropometric measurements of early growth would be available for comparison. These measurements were essentially the same for both groups, but all data were slightly below the norm on growth standards and charts available on infants in well-baby clinics in this country.

9. An Approach to the Study of Infant Behavior

(Donald J. Stedman)

This is a report of an observational study of the development of infants, a suggestion for a theoretical model, a developmental matrix derived from observations using the model, and guides for specific instrumentation for infant observation, coupled with an experimental/stimulating responsive environment for infants.

The proposed theoretical model is an expansion of the psycholinguistic model put forth by Kirk and McCarthy (1961) and is seen as a potentially useful research model upon which conceptualizations concerning infant behavior can be developed and from which research hypotheses may be generated for test.

Using this model a sensory learning hypothesis (Table 6) was derived from systematic observation of apparent

decoding behavior, an analysis of infant developmental schedules, and data from the literature on infant maturation. A design for responsive environments for systematic provision of visual, auditory, and tactual inputs and the monitoring of vocal, motor, and organic outputs was suggested.

Table 6

SENSORY LEARNING HYPOTHESIS

	AGE					
	Rank	30 Days	60 Days	90 Days	180 Days	6 Years
Modal Primacy	1	Tactual	T	V	V	V
	2	Auditory	V	A	A	A
	3	Visual	A	T	T	T

[From observations of apparent decoding behaviors of twenty-four infants from birth to six months of age at Duke University Medical Center, Infant Evaluation Project, Education Improvement Program, Duke University.]

The focus of the study and presentation was directed toward the areas of infant behavioral studies and the application of stimulation programs to infants with decelerating growth patterns, a phenomenon noted with great frequency among the disadvantaged population.

Teacher-Child Transactions Studied

10. A Coping Analysis Schedule for Educational Settings (CASES)

(Robert L. Spaulding)

A persisting problem in educational research is the measurement of teacher-child transactions in live classroom situations. A number of systems of analyzing classroom interaction have been used in recent years, each with a specific focus on some phase of instruction or management. Among these are the Flanders, Gallagher, and Taba interaction analysis techniques.

Continued on page 23

Fig. 2

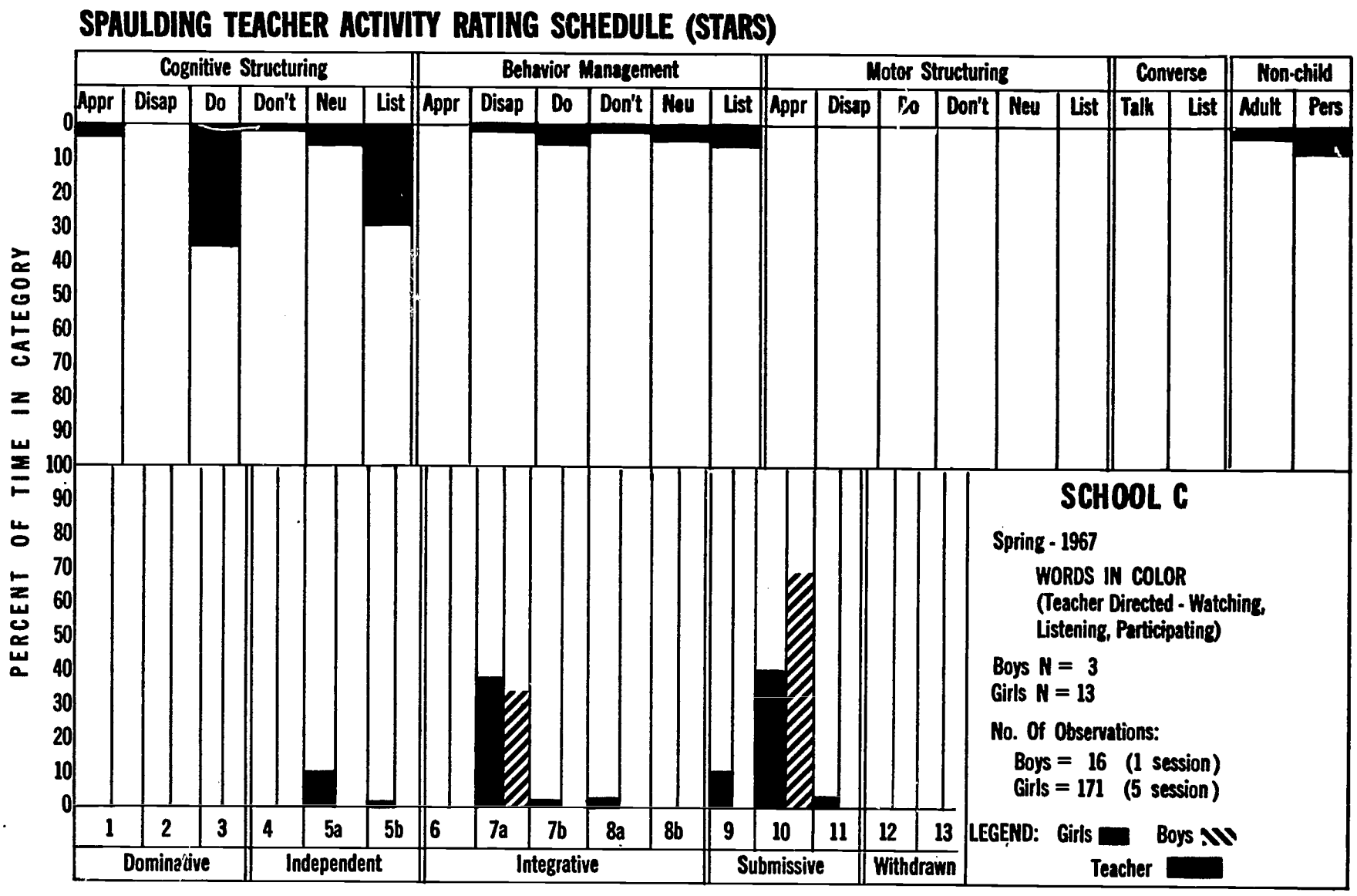
A COPING ANALYSIS SCHEDULE FOR EDUCATIONAL SETTINGS (CASES)*

(Brief Form for Quick Reference)

1. **Aggressive Behavior:**
   Direct attack: grabbing, pushing, hitting, pulling, kicking, name-calling;
   Destroying property: smashing, tearing, breaking.
2. **Negative (Inappropriate) Attention-Getting Behavior:**
   Annoying, bothering, whining, loud talking (unnecessarily), attention getting aversive noise-making, belittling, criticizing.
3. **Manipulating and Directing Others:**
   Manipulating, bossing, commanding, directing, enforcing rules, conniving, wheedling, controlling.
4. **Resisting Authority:**
   Resisting, delaying; passive aggressive behavior; pretending to conform, conforming to the letter but not the spirit; defensive checking.
5. **Self-Directed Activity:**
   Productive working; reading, writing, constructing with interest; self-directed dramatic play (with high involvement).
6. **Paying Rapt Attention:**
   Listening attentively, watching carefully; concentrating on a story being told, a film being watched, a record played.
7. **Sharing and Helping:**
   Contributing ideas, interests, materials, helping; responding by showing feelings (laughing, smiling, etc.) in audience situations; initiating conversation.
8. **Social Interaction:**
   Mutual give and take, cooperative behavior, integrative social behavior; studying or working together where participants are on a par.
9. **Seeking Support, Assistance and Information:**
   Bidding or asking teachers or significant peers for help, support, sympathy, affection, etc., being helped; receiving assistance.
10. **Following directions passively and submissively:**
    Doing assigned work without enthusiasm or great interest; submitting to requests; answering directed questions; waiting for instructions as directed.
11. **Observing Passively:**
    Visual wandering; watching others work; checking on noises or movements; checking on activities of adults or peers.
12. **Responding to Internal Stimuli:**
    Daydreaming; sleeping; rocking or fidgeting; (not in transaction with external stimuli).
13. **Physical Withdrawal or Avoidance:**
    Flight; moving away; hiding; avoiding transactions by movement away or around.

Note: Categories **5** through **10** are further coded as **a** or **b** in structured settings to indicate appropriate or inappropriate behavior (based on social expectations for the setting). Example: **5a** would be recorded when a child was painting during art period (when painting was one of the expected activities). Painting during "story time" or an academic setting would normally be coded **5b**.

At right: Research Technicians collected CASES and STARS data in kindergarten and ungraded primary classes in EIP's laboratory school.



COPING ANALYSIS SCHEDULE FOR EDUCATIONAL SETTINGS (CASES)

Fig. 4

Fig. 3

THE SPAULDING TEACHER ACTIVITY RATING SCHEDULE (STARS)*

(Brief Form for Quick Reference)

A. Molar Categories:

Cognitive Structuring—Teacher-child transactions focusing on modification of thinking and conceptual structures.

Behavior Management—Teacher-child transactions focusing on modification of social transactions, impulse control, and classroom routine.

Motor Structuring—Teacher-child transactions focusing on modification of motor activities, including fine and gross motor control.

Converse—Teacher-child transaction **not** focused on modification of child behavior. Coded as **Talk** or **List** depending on direction of transaction.

Non-Child—Teacher behaviors **not** child transactional. Coded as **Adult** (for teacher-other adult transactions) and **Pers** (for personal activities).

B. Modification Categories:

Appr—Teacher operants with generally reinforcing affect

Disapp—Teacher operants with generally punishing affect (aversive)

Do—Teacher operants setting or eliciting performance goals and action

Don't—Teacher operants proscribing certain actions (without aversive affect)

Neu—Teacher operants conveying information (but not setting or eliciting performance)

List—Teacher attending to child or group operants

In EIP two instruments are being used to obtain general baseline and post-treatment data. These are the Coping Analysis Schedule for Educational Settings (CASES) (Fig. 2) and the Spaulding Teacher Activity Rating Schedule (STARS) (Fig. 3). When used in conjunction, these instruments permit a "snapshot" of the classroom transactions prevailing during a sampling of settings characterizing the instructional program.

An example of the data obtained using CASES and STARS is presented in the accompanying graph (Fig. 4). These data represent a sampling of the behavior of the boys, girls, and the teacher during six instructional sessions. The children were six years old and were being taught reading by the *Words In Color* method. In such a setting, teacher behaviors eliciting child responses (Do), within certain parameters set by visual dictation (pointing), are appropriate. It is also appropriate for the teacher to attend (List) to responses in the cognitive area. The STARS data indicate that these appropriate behaviors on the part of the teacher predominated. In addition, approval (Appr) as a means of fostering attention and cognitive performance occurred with greater frequency than disapproval (Disap).

The CASES data indicate that both boys and girls shared or contributed ideas (7a) in an appropriate manner and listened submissively (10) when not contributing. One research goal at this point might be to increase the amount of thoughtful, attentive listening (6) to the contributions of others (7a) during reading instruction. However, the degree of integrative activity displayed in these data is quite high when compared to informal observation in other first grade classrooms. Comparisons with control classrooms, using appropriate statistical techniques, will be presented in subsequent research publications of EIP.

A number of special studies have used CASES or STARS singly or in combination. These special studies generally focus on one child—or one teacher—and the instruments provide data from the baseline period and the various interventions instituted over a period of time. These interventions are designed to bring about specific changes in the behavior of a child and the use of CASES provides an accurate measure of change.

Both instruments are employed in teacher training. Teachers find CASES useful in determining how effective their efforts are in bringing about certain desired pupil behavior changes. They also find STARS helpful in providing feedback regarding their own classroom behavior. In many special situations one or two categories of behavior are of special interest, and data are gathered only on that specific category of behavior using event sampling procedures.

STARS may also be used in conjunction with a system focusing on cognitive transactions such as that of Hilda Taba or James Gallagher. Once a teacher has managed to bring her behavior in line with desired proportions of approval and verbal (or visual) structuring for pupil cognitive response, she can further analyze the cognitive strategies she is employing by content analysis (using the Taba or Gallagher systems).

All of the uses mentioned are currently being explored in EIP. Some initial special studies have been completed and are available as separate reports.

Case Studies Describe Behavior Modification

11. Effects of Positive Social Reinforcement on the Negative Behavior of a Kindergarten Child

(Robert L. Spaulding and Marilyn Rothbard)

This study was undertaken to determine whether a planned reinforcement schedule of positive adult attention could be used to alter the negative, disturbing behavior of a kindergarten boy. The aim of the study was to help the child acquire acceptable, cooperative, conforming behavior and to eliminate antisocial, negative attention-getting and resisting behavior with peers and adults, through the systematic application and withholding of positive reinforcement--in this case, adult attention.

"Walter" was one of fourteen children enrolled in an EIP Demonstration Kindergarten. At the beginning of the study, "Walter" was five years, six months of age. He had been in attendance at the school for nine weeks. From his entrance into the kindergarten class, "Walter" was an aggressive child whose behavior included destroying property as well as pushing and hitting his peers. He often exhibited negative attention-getting behavior, such as annoying and bothering other children by touching and grabbing them or their belongings, making inappropriate noises, shouting, using profanity, and crawling under or climbing on tables, all apparently for the pleasure gained by being the center of attention.

Baseline data on "Walter's" behavior pattern was acquired prior to the reinforcement period. Following that, positive reinforcement was presented whenever the child elicited behavior considered appropriate and/or acceptable for the particular activity. Reinforcement consisted of positive, adult attention. Specifically, the adult stayed near the child, watched his activities with interest and pleasure, gave praise for efforts and achievement, and occasionally helped through moderate participation in the activity.

Withholding reinforcement consisted of casually becoming occupied with another child or group of children or merely moving physically away from the child whenever his behavior was viewed as unacceptable or inappropriate. A generalization period followed when the behavior reinforced in the second stage had reached a relatively stable level on an intermittent, as opposed to a continuous, reinforcement schedule.

Considerable gain was made in reducing negative attention-getting behavior and a sharp reduction in aggressive verbal outbursts was noted. Prior to a full exploration of the effects of the reinforcement period and the generalization capabilities of the child, the family moved from the Durham area, and the study was discontinued.

12. Classroom Behavior Modification Techniques Applied to Educationally Deprived Primary School-Age Children

(James J. Gallagher, Nicholas Anastasiow, Barbara Cooper, Betty Cooper, Louisa Douglass, Anne Funderburk, Rebecca Gordon, Jean Hoppe and Marilyn Rothbard)

Three children manifesting unfavorable behavior traits at the laboratory school were given systematic reinforcement for favorable behavior. This reinforcement was first food and then social. Baseline data and follow-up data were also obtained. Two of the children showed favorable advance under this procedure while the other child showed resistance to attempts to modify her passive resistant behavior. It was concluded that this approach can significantly change classroom behavior of children at this age.

13. Modification of the Classroom Behavior of a Disadvantaged Kindergarten Boy Using Social Reinforcement and Isolation: "Bobby"

(Sally Sibley, Martha Abbott and Betty Cooper)

This is a representative study of one of several individual case studies in behavior modification of children in EIP classrooms. These studies are carried out by a regular teacher in the classroom with an individual child whose behavior is inappropriate, deficient, or in some way deemed to be in need of change to a more appropriate pattern. The research staff collects data and decides with the teacher the reinforcement contingencies to be changed or provided in order to achieve the desired behavior pattern.

The goal in this study was to decrease disruptive, resistive, and assaultive behaviors and increase the appropriate peer interactions of a culturally disadvantaged kindergarten boy, "Bobby." The experimental program involved presentation of teacher attention contingent upon "desirable" classroom behavior, withholding of attention contingent upon "inappropriate" behavior, and social isolation contingent upon "unacceptable" behavior.

The child's behavior was classified according to the Coping Analysis Schedule for Educational Settings (CASES), and the teacher's interactions with the child were categorized according to their content (neutral, positive, negative). The child's behavior and the teacher's interaction with him were recorded simultaneously on an event recorder by an observer who had attained high reliability with other trained observers.

The baseline data supported the teacher's contention that the child was a behavior problem, particularly in

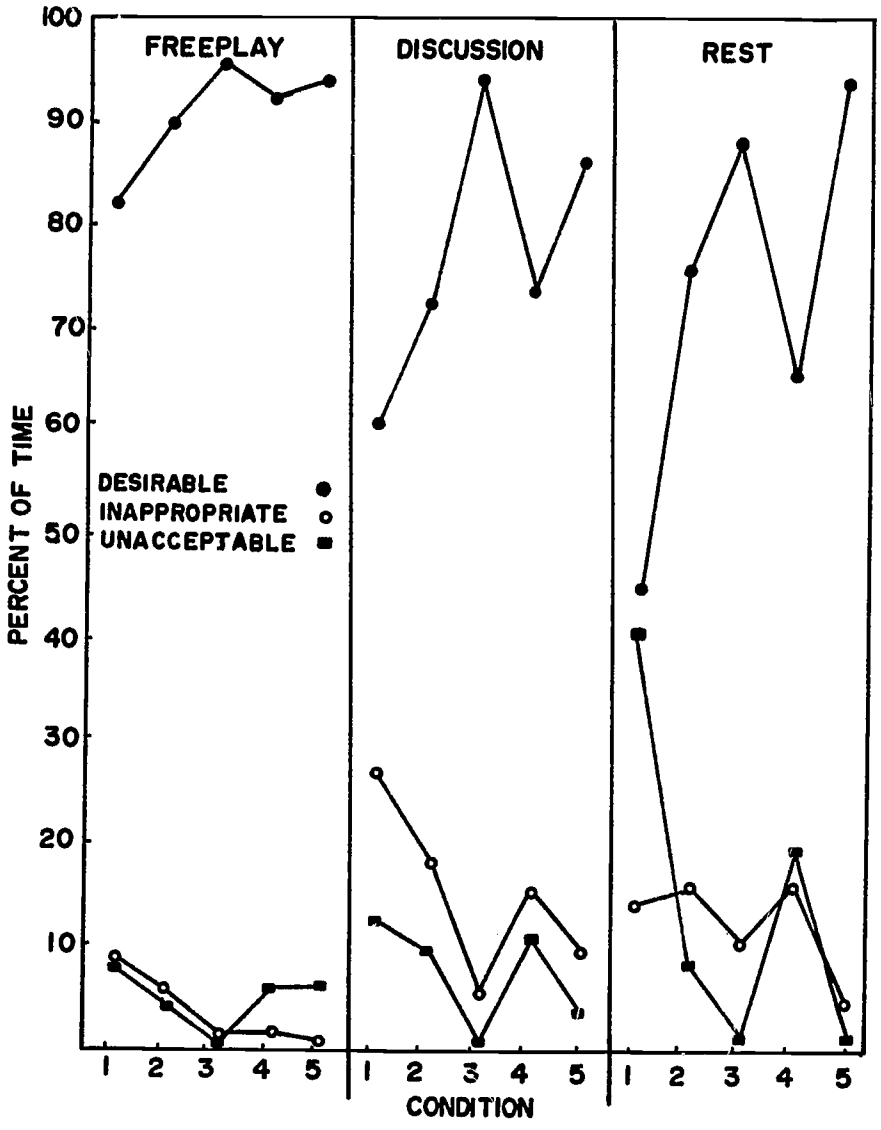


Fig. 5. Percentage of desirable, inappropriate, and unacceptable behavior by activity and condition (1—Baseline, 2—Treatment 1, 3—Treatment 2, 4—Reversal, 5—Re-introduction).

strictly structured situations. The experimental program was carried out daily in the activities of free play, discussion, and rest. Some progress was made under the original program but Bobby's inappropriate and unacceptable behaviors decreased further when they were punished (isolation) rather than ignored, perhaps indicating that they were being maintained by some reinforcer other than overt attention. A reversal of the treatment program (i.e., decreased positive interaction contingent upon desirable behavior and increased negative interactions contingent upon inappropriate and unacceptable behaviors) was introduced to demonstrate that the teacher's interactions were indeed the controlling variable. After the successful reversal, treatment was reinstated with favorable results. There were differential effects of the program as a function of the various activities.

The study was terminated when the child's data indicated that his behavior was no longer a major and chronic problem in the classroom. Two checks were made after the termination of the experimental study which indicated that the teacher was maintaining the treatment as an integral part of the child's environment and that he was still responding favorably.

A sampling of the data from observations of the child's behavior pattern before, during, and after the experimental program is presented (Figs. 5, 6, 7), thus characterizing changes in the child's behavior pattern in the various conditions, during parts of the daily classroom program.

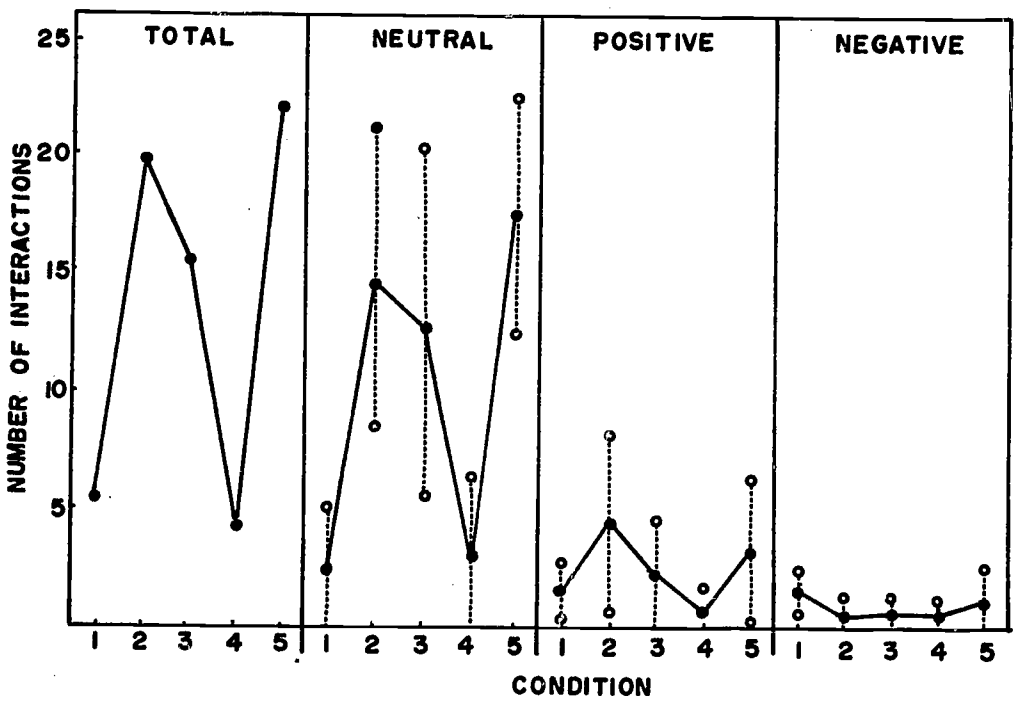


Fig. 6. Freeplay: Mean and standard deviation of frequency of teacher interaction by experimental condition (1—Baseline, 2—Treatment 1, 3—Treatment 2, 4—Reversal, 5—Re-introduction).

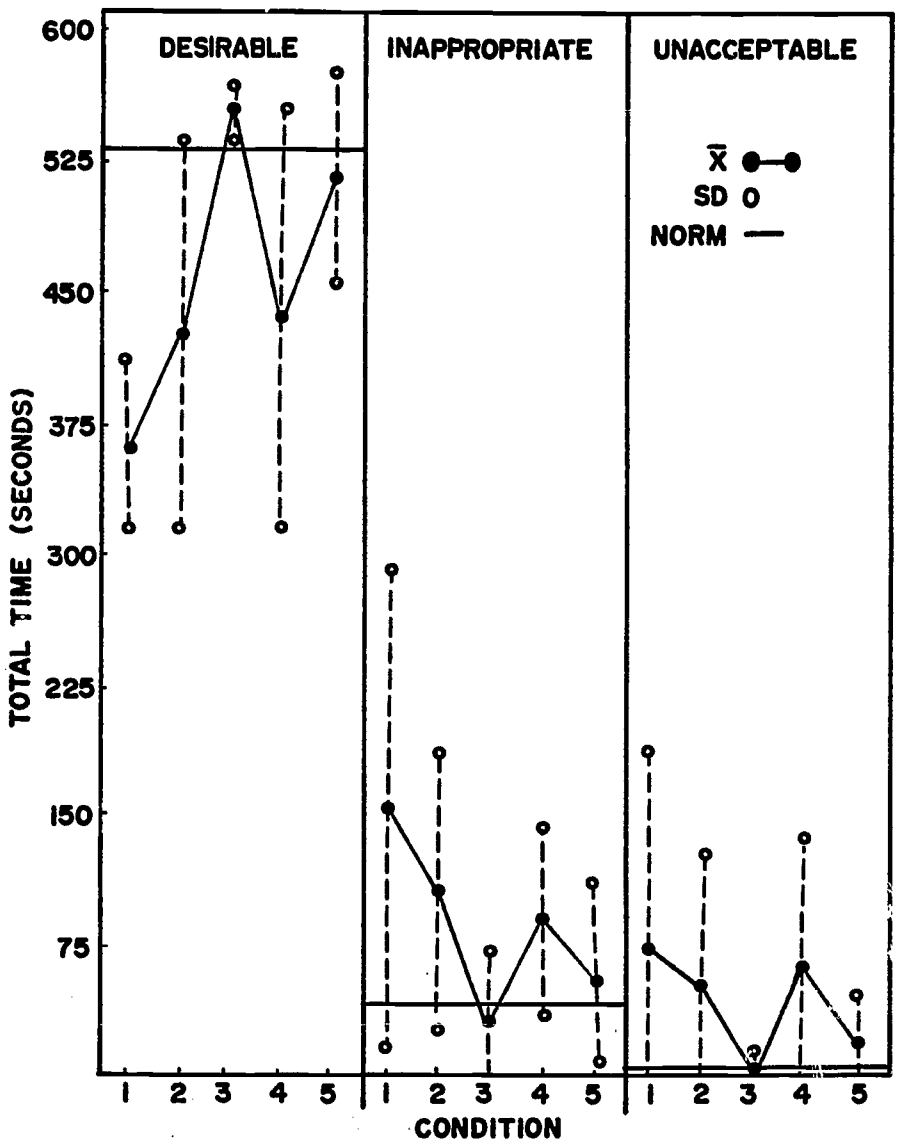


Fig. 7. Discussion: Mean and standard deviation of subject's behavior by experimental condition (1—Baseline, 2—Treatment 1, 3—Treatment 2, 4—Reversal, 5—Re-introduction).

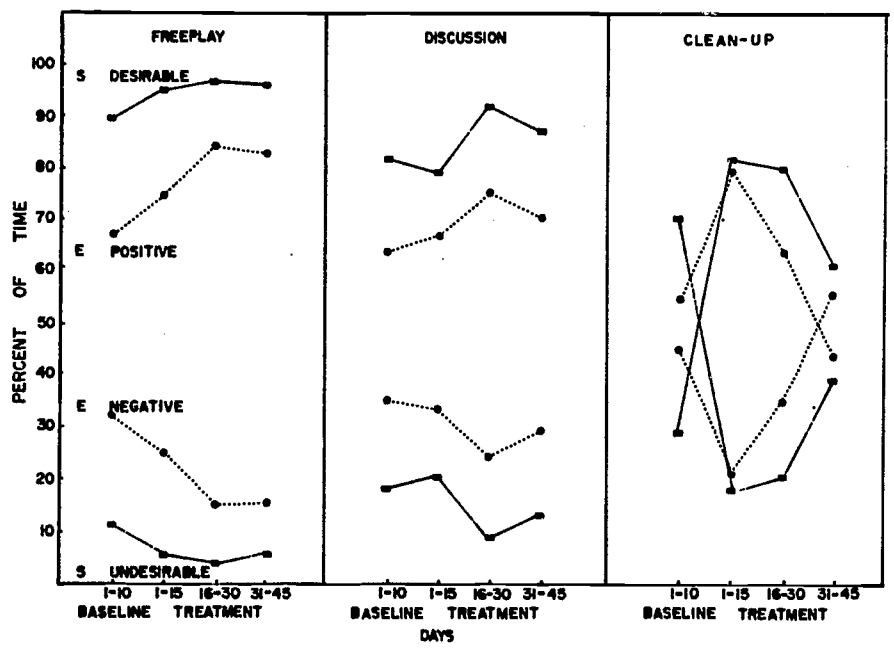


Fig. 8. Percentages of subject's desirable and undesirable behavior and percentages of experimentor's positive and negative interaction by activity and condition.

14. Modification of the Classroom Behavior of a Dis-Advantaged Kindergarten Boy by Social Reinforcement and Isolation: "Larry"

(Sally Sibley, Rebecca Gordon and Aloha Peyton)

As mentioned in the previous study presentation, the teacher must modify her behavior as related to a particular child in order to administer the proposed reinforcement contingencies in the experimental program. Modifying her own behavior, even with continued feedback from research personnel, is difficult for a teacher within the classroom situation. Although the absolute number of each type of interaction may fluctuate during treatment, the teacher should be able to maintain the same proportion of negative and positive interactions. The data presented below show the correspondence of teacher interaction and child behavior in a study with "Larry" in a similar treatment program to that of "Bobby."

As seen in Fig. 8 the teacher was not able to maintain the same proportion of positive and negative interactions across treatment days. The child tracked the trends of the teacher's behavior very closely. From other analyses of this investigation, it appears that the teacher had a great deal of difficulty in maintaining consistency throughout the treatment program. Instead, she tended to respond to the child's response to her attempts to interact, rather than to pursue the program despite his initial resistance. The teacher's inconsistencies are reflected in the child's inconsistency, and vice versa. In a behavior modification study, the teacher should be helped to behave on the basis of planned contingencies and not be discouraged by the lack of immediate reinforcement from the child.

This study was a success, in that it highlighted the teacher's difficulties in an experimental program and the longstanding nature of the child's problem behavior, resistance, and lack of responsiveness to authority. This study demonstrates the necessity of focusing on the teacher's behavior, as is done in EIP classrooms, as well as the child's behavior in carrying out a behavior modification program.

Teacher Compatibility Measure Administered

15. A Method of Evaluating Teacher Compatibility in Team Teaching (FIRO-B: Fundamental Interpersonal Relations Orientation-Behavior)

(Sally Sibley and Betty Cooper)

In an educational setting utilizing team teaching as EIP does, a significant problem is that of composing compatible and productive units. At present, the decisions are made by virtue of subjective impressions and on the basis of the supervisor's past experience. Occasionally, assignments must be made without a thorough knowledge of the behavioral personality characteristics of each teacher, much less how one teacher's behavior may affect that of another.

To take a first step toward a possible objective aid in making these decisions, all EIP teachers have been administered the 54-question FIRO-B scale which yields indirect measure of how much behavior the teacher expresses and how much she wishes to receive in three interpersonal areas—inclusion, control, and affection. Two people are compatible if they express the amount of a particular behavior the other one wants, if they complement each other in wanting to originate or receive, and if they want the same degree of interchange of behavior.

No experimental studies have been carried out with EIP with the FIRO-B. It was administered recently to determine if it discriminated between dyads in amount of compatibility. If the scale did not produce a good range of compatibility scores, it would obviously not be useful for predictive purposes.

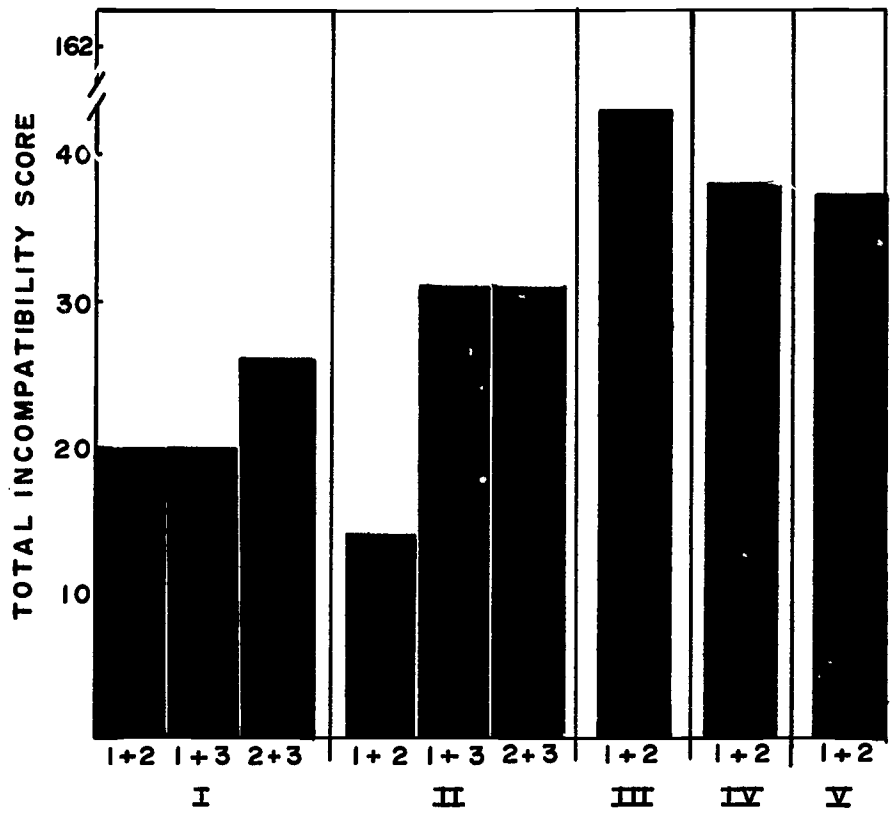


Fig. 9

Fig. 9 represents the total incompatibility scores of all the teaching teams of EIP. Two teams are composed of three teachers each, whereas the other teams have only two teachers involved. The figure thus presents the nine dyads who must regularly work together. The larger the score, the greater the incompatibility with 0 representing the perfect compatibility. The maximum total incompatibility score is 162.

Fig. 10 shows only one of several types of breakdown of incompatibility scores. The three major areas of interpersonal behavior are represented. It is evident that the dyads do differ as to the loci of their incompatibility.

The administration of the FIRO-B score this year has yielded us the knowledge that the teams are distinguishable by the various scales. The plan is to prepare formal studies of this scale as a predictor of team compatibility and success.

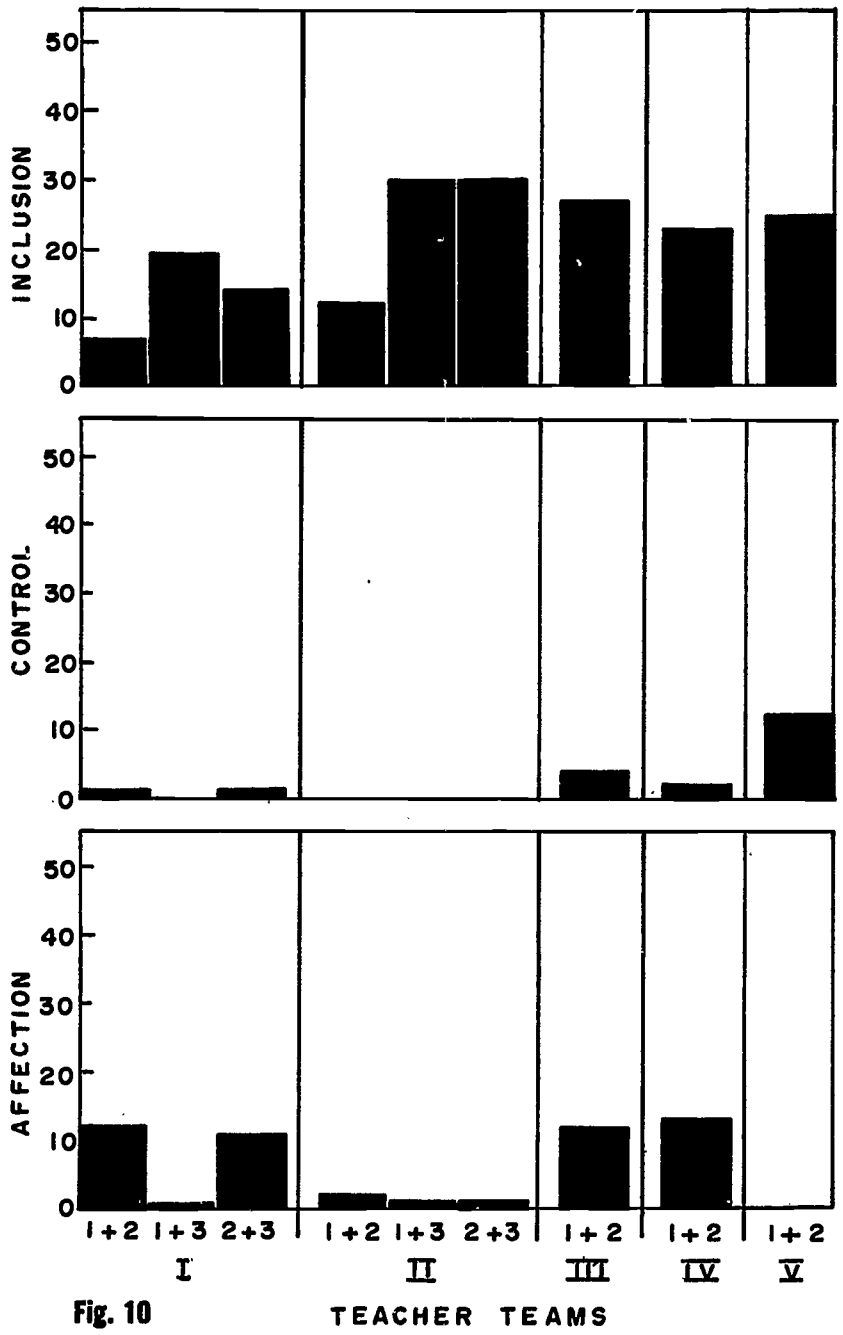
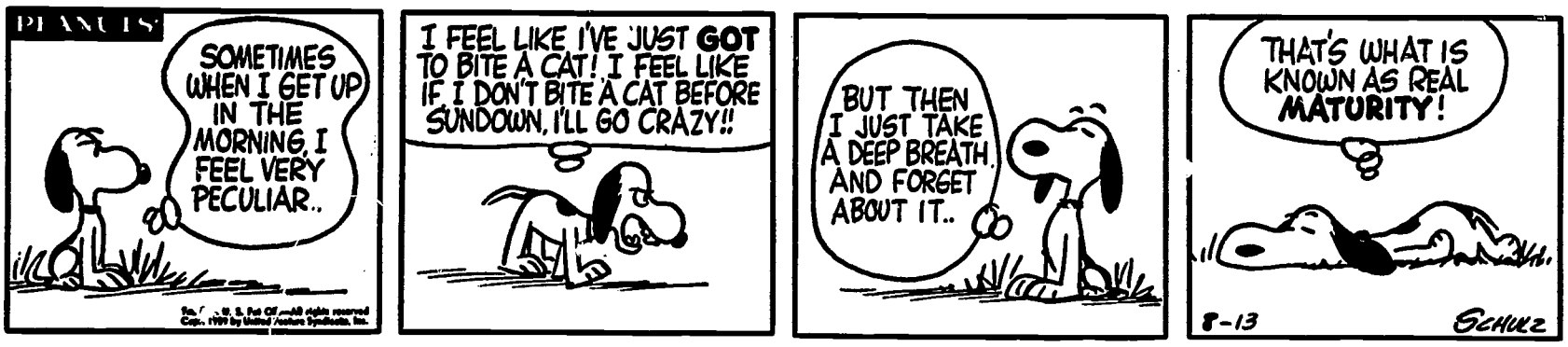


Fig. 10

PEANUTS ●

By Charles M. Schulz



Curriculum Studies Launched

16. Introduction of Geometric Concepts and a Reinforcement System to Culturally Disadvantaged Kindergarten Children

(Patricia Barton, Martha Abbott, Sally Sibley and Betty Cooper)

Twenty-two children in an EIP kindergarten were instructed in prenumber concepts through the use of geometric forms over a period of eight weeks. A geometric inventory was devised and administered to the children prior to the introductory material and after completion of prescribed workbook material. Negro and white children of both sexes attended one of two groups, each of which was divided into an average and a low group, classified on the basis of the Stanford-Binet and the pretest. Each group received 25 minutes of instruction per school day for eight weeks. One teacher, assisted by a research technician, instructed the four groups daily. Over the eight week period, the afternoon group received individual reward in the form of token reinforcement for correct responses in their workbooks. Tokens were exchangeable for a toy preselected by the child. At the beginning of the seventh week, the morning group was switched to a reward system identical to that of the afternoon group. At the completion of the study, each child was administered a post-test, and an evaluation was made of the gain from pre- to post-test examination. Achievement results are presented in the table below. Other results indicate that although tokens did not lead to greater math achievement, they did lead to greater preference for math activities and greater motivation to perform the activities (Table 7).

Table 7

GEOMETRIC ACHIEVEMENT TESTS (47 QUESTIONS)

	Group	Pre-Test	Post-Test	d	t
1 Week Reward	Low	17.00	34.75	17.75	71.00*
	Average	26.00	37.83	12.50	5.93*
8 Weeks Reward	Low	22.65	36.33	13.67	8.88*
	Average	26.67	38.67	12.00	14.02*

* = $p < .01$

17. An Investigation of the Cognitive Processes of Disadvantaged Children

(James J. Gallagher, Carol Dixon and Anne Funderburk)

In an effort to explore the cognitive abilities of disadvantaged children through the systematic application of lessons designed to focus on the child's attention on classification, analogies, and systems, 10 six- and seven-year-old children (five boys and five girls) enrolled in an EIP ungraded primary group were presented with a series of tasks designed to illustrate three different cognitive operations that the primary grade child should master. Materials for this study were designed in the dimensions of classification, matrices, and family relationships.

Each of the groups of five children received two lessons each on the classification and analogies (or matrices) tasks and one session on family relationships.

Performance of the children on the cognitive tasks indicated poor performance in classification abilities, rather incoherent explanations for the bases for groupings, apparently limited use of verbal mediators to relate perceptual images, limited ability to verbalize in general, and a tendency to lapse into functional relationships in attempting to group items. The matrices or analogies task indicated that the dimension of color provided the simplest dimension and resulted in the fewest number of errors. Completeness or wholeness seemed to cause the

most trouble, followed by shape, quantity, position, and pattern. In this task, it was often apparent that the children were operating primarily in the perceptual image mode rather than in the conceptual mode and were not making extensive use of verbal mediators in problem solving. Verbalizations were fragmentary and concrete.

Analysis and interpretation of the family relationships lesson is underway but incomplete.

In general, the performance of the children upheld the notion that language-limited children, such as the disadvantaged, may be restricted to the more primitive perceptual mode in dealing with information rather than the more complex and sophisticated conceptual mode utilized by the language-rich child. Operating at this lower level amounts to a learning disability in the classroom situation.

18. Linguistic Reading in Negro First Graders
(Nicholas Anastasiow)

Many new reading programs use a linguistical process-oriented approach to teaching initial reading. Although these linguistic-based programs differ from each other, there are marked differences between them and the more traditional reading programs.

The linguistic approach is based on criteria involving the structural nature of the phonological, syntactical systems of English, while the conventional programs evoke the criteria of word frequency, experiential familiarity and demonstrability, and story content. In the Education Improvement Program, the *Words In Color* approach and the *Sullivan Programmed Reading Material* fall within the linguistic approach.

One of the problems of evaluating a linguistically oriented program is arriving at a suitable criterion measure. Most of the standardized reading achievement tests do not measure the linguistic competencies that the new program is trying to teach.

A test designed by Nicholas J. Anastasiow, EIP program director, and Duncan Hansen of Florida State University has been developed and tried with lower and middle class children over a two-year period. ("Criteria for Linguistic Reading Programs," *Elementary English,* March, 1967.)

This test was used with EIP children and a control group as a means of assessing achievement. The test has a test-retest reliability of .94 and a split-half reliability of .97. It correlates sufficiently high with other reading tests to indicate that it is measuring reading skills but not so high as to indicate that it is measuring the same factors as the traditional measures.

An analysis of the results of the study showed that EIP first grade girls had a mean of 30.15 and a control group of girls a mean of 19.25, a significant difference at the .05 level. There were no significant differences between the control group boys and the EIP boys, although the mean for the control group was higher (20.07 compared to 16.55). Comparing the EIP total group with a group of lower class California Negroes, the EIP group had significantly higher means on the total score (EIP, 23.92; California group, 16.98; p. 01). In addition to the difference between the means, there was also significant difference in the variability among the groups. There was greater variability in the EIP than in the control group, significant at the .01 level, and a greater variability than in the California group, significant at the .05 level. This would indicate that some EIP children are learning at a more rapid rate than children within the other two groups. These results can be interpreted to indicate that in the EIP program more attention was given to meeting individual differences in reading instruction and plans for acceleration than in the other two groups.

In analyzing the scores of children within the three Durham classes scoring at each particular level, it was noted that the three groups (two EIP and one control) had very similar numbers of children in the class who received lower scores. At the upper end of the distribution a greater percentage of children within the Negro EIP class attained high scores than did children in the other two classes involved in this study. This finding was supported by the increased variance scores reported earlier.

In summary, there was an indication that the EIP girls had made greater gains than a control group of girls and also, as a total class, the EIP group made greater gains than the California group.

James J. Gallagher, who held a Duke visiting professorship during 1966-67, consulted to EIP's research component and directed a number of special studies. Dr. Gallagher is pictured above with research technicians, Rebecca Gordon and Jean Hoppe.

Several special studies were concerned with psycholinguistic ability and language development of disadvantaged children. Above: Jane Taylor, EIP speech and hearing specialist.

Psycholinguistic Abilities Evaluated

19. An Evaluation of the Psycholinguistic Abilities of Eight Culturally Disadvantaged Preschool Children
(Donald J. Stedman and Bonnie Rothman)

In this study, eight children with a chronological age between three and five years were selected for a study of the effects of family make-up on psycholinguistic ability. These children obtained Peabody Picture Vocabulary Test IQ scores between 80 and 105 and were administered the Illinois Test of Psycholinguistic Abilities as a primary evaluation instrument together with the Stanford-Binet Picture Vocabulary Test.

The psycholinguistic ability profiles of all eight children indicated a superiority in visual-motor tasks compared with similar auditory-vocal tasks. Except in the encoding tasks this same pattern was found for those children designated as the feminine influence group while the opposite was true of the masculine influence group. The sex of the child did not seem to influence specific ability, although the boys obtained greater overall language ages. A brother within four years of the age of the child was correlated with relatively high scores in motor and coding ability regardless of the sex of the child.

Strength in vocal encoding was found to be present in the small family or the family with children predominantly over fifteen years old.

Results were discussed in terms of previous research suggesting sex related differences in cognitive style associated with learning and linguistic behavior as they relate to family constellation and masculine and feminine influence as well as the sex of the child itself.

The result of this pilot study, which attempted to look into the relative effects of feminine versus masculine influence on the language development of disadvantaged children, was sufficiently provocative to warrant a heavier investment in a larger and more carefully constructed evaluation of this aspect of language development.

20. A Factor Analytic Study of the Performance of 340 Disadvantaged Children on the Illinois Test of Psycholinguistic Abilities
(Donald S. Leventhal and Donald J. Stedman)

The Illinois Test of Psycholinguistic Abilities was administered to 340 six-year-old children who were enrolled in a pre-kindergarten Head Start program in a North Carolina community. Children ranged in age from 5 years, 8 months to 7 years, 9 months with a mean age of 6 years, 4 months at the time of testing. There were 180 boys and 160 girls, of which 27 boys and 28 girls were Negro.

Analysis of variance of the ITPA subtest scores indicated significant differences in favor of the white children over the Negro children on all nine subtests of the ITPA. The Negro children were particularly deficient on those subtests requiring language and less deficient on those tests of perceptual or nonsymbolic nature. Factor analyses were accomplished within each racial subgroup in an effort to take a closer look at intragroup differences in subtest responses. In addition, factor analyses were accomplished on the intercorrelations between the ITPA subtest raw scores for both Negro and white samples.

Contrary to the previous indication that the ITPA was designed to provide independent estimates of a child's level of functioning in each of the nine abilities addressed, the factor analyses in this study cast doubt upon the independence of the abilities assessed. Specific likenesses and differences between encoding and decoding abilities within and between Negro and white child groups were presented and discussed.

21. An Observational Comparison of the Language Development of Two Preschool Groups
(Bonnie Rothman and Lloyd J. Borstelmann)

In order to investigate the differences which might occur in language development as a result of manipulation of environmental variables, two groups of preschool children were selected for observation. An "advantaged" group was selected from the Duke Preschool Laboratory and a "disadvantaged" group of children was employed by utilizing an EIP kindergarten. Peabody Picture Vocabulary Test IQ scores in the advantaged group ranged from 117 to 142 with a Mean IQ of 130. Similar scores in the disadvantaged group ranged from 83 to 117 with a Mean IQ of 89.

Fifty unelicited and consecutive verbalizations were obtained from a sample of children in each group as a standard of actual comparison. Verbalizations were analyzed for correctness and completeness of word usage, mean length of the expression units, sentence completeness, and sentence complexity. Verbalizations were also scanned for verbal richness—the use of varying tenses, adjectives, adverbs, possessives—and a category classified as "creative expressions."

A comparison of the analyses of the verbalizations indicated that the disadvantaged group constantly showed a greater frequency of errors than the advantaged group. Errors in the form of substitutions were not found in the language of the advantaged children. Omissions were noted in both groups. The most frequent distortion in the disadvantaged group was the slurring together of

words into one unit or the employment of "giant words." The length of expression units was found to be longer in the advantaged group as compared to the disadvantaged group. Sentence complexity was greater in the advantaged group as was the frequency of the use of compound sentences. In the general category of "verbal richness" the advantaged group again held the advantage in all categories except "possessives" in which both groups were basically equal.

22. Associative Clustering in Culturally Deprived and Non-Culturally Deprived Children

(Lee Spence and Donald J. Stedman)

This study was an extensive evaluation of associative clustering, perceptual sorting, sort naming, and concept naming behavior in 40 five- and six-year-old Negro children. Twenty were culturally deprived and 20 were not.

Results indicated a surprising degree of similarity between the two social classes in clustering behavior. It was apparent that the conceptual processes underlying associative clustering were similar in both groups of children evaluated.

There were, however, qualitative differences in the recall behaviors of the children such that hypotheses about class differences in concept storage and retrieval could be made. A comparison of the results of the main tests indicated that the degree of language involvement is a useful dimension in comparing disadvantaged and non-disadvantaged children. The tasks used required the child to produce verbal labels for concepts. Beyond this, the concept naming task appears to be the quickest and easiest to administer and provides the best single index of class membership. Results in this task clearly supported the conceptual deficiency of disadvantaged children in the abstract use of language.

Aside from a comprehensive investigation of the cognitive processes in disadvantaged children, the study developed an extensive presentation on the variety of theories on language development, research on stimulus and language deprivation, social class differences in conceptual development, and a position statement on language and thought as related to disadvantaged children. (Senior Author's Master's Thesis, Department of Psychology, Duke University.)

23. Psycholinguistic Abilities of Culturally Deprived Children

(Sheila Morrissey and Donald J. Stedman)

Fourteen culturally deprived first graders (seven boys and seven girls) were evaluated with the Illinois Test of Psycholinguistic Abilities (ITPA) before and after their first eight months of school. The purpose of the study was to evaluate the stability of the ITPA over time, and its applicational merit with culturally deprived children.

Results indicated striking similarities in the children of responses during the two test administrations. ITPA profiles were nearly identical, showing significantly greater ability in the visual subtests than in the verbal. The mean language age increase was one year, six months. The data indicated that the ITPA is a reliable instrument for use with the culturally deprived child. It also suggested that the pattern of psycholinguistic skills and deficits is well established by school age and that it would be profitable for future research to direct itself to the possibilities of early intervention in order to prevent psycholinguistic handicaps.

(Senior Author's Masters thesis, Department of Psychology, Duke University.)

VII. DEMONSTRATION/TRAINING

Manpower Shortage Sparks Staff Innovation

In any large field study manpower becomes a critical problem. This is especially true when a general evaluation is accomplished on children during the fall and spring of each year. The cost in manpower, money, and time required to maintain a full-time force to mount seasonal operations would be prohibitive and wasteful.

Also, there is a demand in education for middle manpower with evaluation skills permitting the development of educational screening programs, measurement of instructional progress, and assessment of curriculum.

To meet these two needs—manpower on a seasonal basis and a pool of skilled educational evaluators—a demonstration program to train educational technicians for use in the Research Component was developed.

The latent talent pool of Durham, N. C., was assessed by advertising the need for educational testing personnel. It was stated that an average time contribution of 50 percent of any given two-week period would be required, and that both training and supervision would be supplied.

Some 35 housewives in the Durham area responded, including the wives of business and professional men in the community. The women who replied had various levels of training and background, and an interest in children and education. From this group 12 individuals who met requirements of adequate background, experience, and motivation were selected. Minimal requirements included high school education, some experience with children (including their own), and lack of interest in EIP as a response to a missionary drive.

These educational technicians were placed in a training program in the early fall of 1966. They were provided with an orientation to the psychological and educational assessment of children, individual and group testing, facts and theoretical positions relating to the problem of disadvantaged children, techniques of interview and survey, an introduction to statistical methods, and a seminar on the ethical obligations and considerations in the evaluation of children by psychometric techniques.

Twelve Durham housewives were trained as educational technicians and administered standardized individual and group tests to EIP students.

During the course of the training period and the fall evaluation, educational technicians were instructed and gained experience in the administration of the Wechsler Intelligence Scale for Children, the Peabody Picture Vocabulary Test, the Columbia Mental Maturity Scale, the Stanford-Binet, the Preschool Attainment Record, and group tests including the Lorge-Thorndike Test of Intelligence, the Metropolitan Achievement Test and the Metropolitan Reading Readiness Test. In addition, each technician learned and accomplished Puretone Audiometer Hearing tests, Snellen Chart Visual Screening tests, Templin-Darley Speech tests, and the Ishihara Color Blindness Evaluation.

Educational technicians were also used in a survey of neighborhoods in the acquisition of control groups for general evaluation and special studies.

The educational technicians administered a total of 223 practice psychological tests in the course of their training. In addition, they administered 77 group tests, 472 sensory screening tests, 229 individual IQ tests, 280 special study instruments, and 55 survey interviews to the EIP population. In preparation for testing, the technicians spent an average of six hours studying the Peabody Picture Vocabulary Test, five hours on the Columbia Mental Maturity Scale, 33 hours on the Wechsler Intelligence Scale for Children, and 21 hours on the Stanford-Binet. All told, the technicians spent a total of 4,212 hours with EIP from September 1966 through March of 1967, completing the fall, 1966 evaluation on eight school groups. They spent approximately 33 percent of their time in workshop-study activities and the balance engaged in productive evaluation activities.

Where testing space was not available, the EIP mobile laboratory, containing three testing rooms, was detailed to the school.

Tests were scored by the education technician, rescored by the coordinating personnel, and data were posted to individual folders, then summarized and reported to the data manager for storage in the EIP data bank.

It is the consensus of local school officials, teachers, and EIP staff that the educational technician program was singularly successful. It has demonstrated that such a program can be developed quickly, economically, and with few problems, providing the training period and supervision are of high quality and that a continued high level of motivation is maintained.

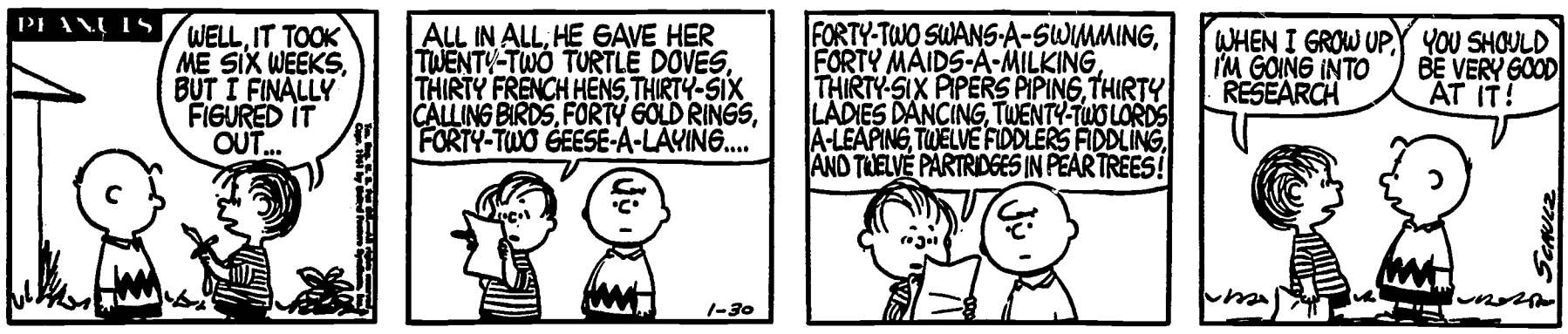
There is now a substantial group of educational technicians qualified in the individual administration of standardized intelligence and achievement tests, as well as individual tests of social maturity and group tests of academic achievement. Utilizing such a pool, EIP can proceed on a course of general evaluation without hampering special study or individual research project effort.

Coordination and supervision are the keys to the development and maintenance of this program, and the ingenuity and patience of Mrs. Miriam Clifford, EIP school psychologist, and Mrs. Anne Spitznagel, chief research assistant, are, in large measure, responsible for its success and quality.

Such a group can be developed within any school system where a latent manpower pool is available, and where even minimal training and supervision resources are at hand. The availability of trained educational technicians is a priceless commodity and, properly used, can demonstrate the great utility of evaluation in the development of better programs in educational systems.

PEANUTS®

By Charles M. Schulz



Robert L. Spaulding
EIP Director

VIII. EDUCATION IMPROVEMENT PROGRAM

Research Staff and Consultants Pool Talents

RESEARCH AND EVALUATION

DIRECTOR OF RESEARCH
Donald Stedman

SPECIAL STUDIES CONSULTANT
James Gallagher

RESEARCH SOCIAL WORKER
Maurine LaBarre

SCHOOL PSYCHOLOGIST
Miriam Clifford

PSYCHOMETRIST
Anne Spitznagel

DATA MANAGER
Theodore Buschman

RESEARCH TRAINING FELLOW
Sally Sibley

RESEARCH TECHNICIANS
Henrietta Brandt
Adrian Cato
Betty Cooper
Ellen Elsas
Anne Funderburk
Patricia Gaines
Rebecca Gordon
Jean Hoppe
Teresa Leonhardt
Mary Menge
Clyde Penny
Bonnie Rothman

INFANT PROJECT EVALUATORS
Patricia Jones
Barbara Kerton
Tempa Pickard
Lorette Powell
Judy Simpson

EDUCATIONAL TECHNICIANS
Mildred Artley
Martha Fairbank
Rita Kaufman
Helen Lewis
Elizabeth Nelson
Elizabeth Steel
Margaret Wampler
Constance Watts

RESEARCH CONSULTANTS

Dr. John Burchard
University of North Carolina

Dr. Rue Cromwell
Vanderbilt University

Dr. Marilyn Erikson
University of North Carolina

Mr. James Fortune, Sr.
Duke University Medical Center

Mr. Jackson Glasgow
WTVD-TV, Durham

Dr. Robert Hale
Duke University

Mr. John Herrin
WTVD-TV, Durham

Dr. Willia Hollister
University of North Carolina

Miss Susan Stolte
Duke University

Dr. Patricia Waller
University of North Carolina

Staff Papers Cover Wide Range of Subjects

During 1966-67 the staff engaged in a variety of consulting activities as well as the development and presentation of staff papers to local, regional and national groups. The following list is a sampling of topics for which reprints are available.

"Some Factors Affecting the Mental Health of Children"
Donald J. Stedman

A paper presented to the Second Virginia Congress on Mental Illness and Health, Richmond, Va., April 15, 1967. A discussion of the dissonance between what we say and what we do in the development of programs for exceptional children.

"The Culturally Disadvantaged and Compensatory Education: Fantasies and Realities"
L. J. Borstelmann

A discussion and critique of psychological conceptualization on the problem of educational intervention programs. Presented to the Northern Ireland Branch of the British Psychological Society, Belfast, Northern Ireland, January, 1967.

"A Model for Studying Teacher Instructional Strategies"
James J. Gallagher

The presentation of a model for the study of instructional strategies suggesting a topic classification system and presentation of data using this system based on Guilford's model.

"How to Get from Here to There?"
James J. Gallagher

A position paper prepared for the Regional Education Laboratory for the Carolinas and Virginia, discussing the problems of research, development, dissemination and acceptance in innovative educational programs.

"Curriculum Changes for Gifted Students"
James J. Gallagher

A discussion of labels and goals in the area of curriculum development for gifted and talented children.

"Introduction to Learning Disorders"
James J. Gallagher

Presented to the Conference on Learning Disorders, Athens, Ga., September 13, 1966—a discussion of the problem of children with learning disorders; some suggestions for terminology, clinical and educational treatment approaches.

"The Quiet Place—A Means for Behavior Control"
James J. Gallagher

A staff paper covering the need for behavior control in the classroom and suggesting a method for such control without the use of punishment.

"Special Education in 1977: The Projection of Trends"
James J. Gallagher

Presented to the Council for Exceptional Children, January 1967—a projection of special education needs and programs over the next decade reflecting on societal change, the current direction of education and the needs of exceptional children.

"Changes in American Education and Their Implications"

James J. Gallagher

A presentation of major changes in this country over the last several years and the meaning of these changes for the future of education in general and more specifically issues related to special education.

"The Social Choices of Students in Racially Integrated Classes for the Culturally Disadvantaged Talented"

James J. Gallagher and Verna Godman Janzen

A paper appearing in *Exceptional Children* indicating that there are substantial cross-racial choices within classroom situations with many factors influencing the nature and the kind of such choices. A complex but well controlled study of the effect of integration on the social choices of bright students.

"Research and Evaluation in the Education Improvement Program"

James J. Gallagher

A position paper on research and evaluation prepared by Gallagher, Stedman and Spaulding and presented in this report by Gallagher.

"A System of Topic Classification—Classroom Interaction Study"

James J. Gallagher

A report to the Bureau of Research, U. S. Office of Education on a study of classroom interactions and the development of a system of classifying topics and verbal interactions between teacher and students in the classroom.

"The Training of Physicians in Mental Retardation"

Donald J. Stedman

An article for *Mental Retardation,* October, 1966, outlining a program of training for pediatricians in the area of mental retardation which includes instruction and experience in special educational programs.

"A View into the Cloudy Crystal Ball"

James J. Gallagher

A list of suggested special study projects for an innovative educational program.

"A Social Learning Approach to the Education of Disadvantaged Children in Durham, North Carolina"

Robert L. Spaulding

An explication of theoretical assumptions, suggestions for program and evaluation approach following the social learning theory with disadvantaged children.

"Life-Situational and Dynamic Factors in the Pregnancy Experiences of Married Adolescents"

Maurine LaBarre

A presentation of material from the literature and a pilot study characterizing the crises of the pregnant adolescent and necessary programs for the support of the teenage mother.

"Looking Forward in Mental Retardation"

Donald J. Stedman

Presented as the 1966 John Umstead Lecture at the State University of North Carolina at Raleigh—a presentation on the problem of culturally and environmentally induced mental retardation and suggestions for program development to alleviate and reduce the problem over the next several years in North Carolina.

"Sex Role as Heuristics"

Nicholas J. Anastasiow

A paper discussing development, sex role theory, social learning theory and cognitive development within the context of the process of the heuristic.

"The Process Goals, the Teaching of Science and the Culturally Deprived"
Nicholas J. Anastasiow

A discussion of current educational programming in the area of cognitive skills related to the new science curriculum and math program and its effect on our preparation of educational programs for the disadvantaged.

"Need for Teacher Reeducation"
Nicholas J. Anastasiow

A discussion of the problem of reeducating teachers and school personnel to adjust to and put into practice the changes taking place in education today.

"Sensory-Motor Activities for Early Childhood"
Diane S. Turner

A manual of motor-skill development for the disadvantaged.

"Psychological Evaluation in Pediatric Practice"
Donald J. Stedman

An emphasis on the importance of early psychological evaluation in order to establish educational intervention at the most optimal time in the child's intellectual development period. Suggestions for psychological testing that can be accomplished by the pediatrician to provide more reliable data for his own use in making better referrals for specialty consultation.

"Cultural and Social Deprivation and Its Relation to Mental Retardation"
Donald J. Stedman

A presentation to the Conference of the Citizens Committee for the Fiftieth Anniversary of the Children's Bureau, Washington, D. C. A discussion of the relationship between "cultural deprivation" and traditional terminology in mental retardation, the similarities and differences in the behavioral pattern, and the problem of cultural achievement.

"The Use of Principles of Behavior Modification in EIP Classrooms"
Robert L. Spaulding

An overview of behavior modification approaches in EIP and definitions of terms used in the development and application of programs using reinforcement techniques.

"Summary of Effects of Preschool Education"
Robert L. Spaulding

A report to the National Conference of State Legislators, Washington, 1966. A brief overview of the development of preschool education programs as intervention programs and a brief summary of the outcome of various studies.

"The Two-Year-Old: Is This a Critical Age for Intellectual Development?"
Nancy Bayley

A paper presented at Duke University in 1966 summarizing research in early child development over the last several decades and presenting arguments in data for focusing upon the two-year-old in order to better understand the process of intellectual development during its critical phases.

"The Role of Minority Groups in Educational Program Development"
James J. Gallagher

A useful characterization of the various subgroups or educational minorities in special education as minority groups in an effort to understand the ways in which competition and cooperation develop and are fostered in the general area of special education.

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