

DOCUMENT RESUME

ED 040 534

EC 005 819

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TITLE The Early Identification and Remediation of Learning Problems in Elementary School Children as an Attempt to Increase Success in the Regular Classroom: A Project Progress Report.  
INSTITUTION University of South Florida, Tampa.  
SPONS AGENCY Florida State Dept. of Education, Tallahassee.; Office of Education (DHEW), Washington, D.C. Bureau of Education for the Handicapped.  
PUB DATE Apr 70  
NOTE 70p.  
EDRS PRICE MF-\$0.50 HC-\$3.60  
DESCRIPTORS Curriculum Development, \*Exceptional Child Research, \*Grouping (Instructional Purposes), Identification, Inservice Teacher Education, \*Intervention, \*Learning Difficulties, Prevention, \*Research Projects, Special Classes, Special Services, Teacher Aides

ABSTRACT

The research project described involves young elementary school children with demonstrable learning problems. These children either receive an intervention program or no intervention and are placed in either a regular or a small, self contained classroom setting. Student placement is made on the basis of psychometric test scores and teacher recommendations. Project personnel include coordinators and several consultants in the areas of administration, curriculum, social and clinical services, and evaluation. Teachers come from the schools involved and receive orientation along with their principals. Teacher aides constitute a major component of the intervention package, as does the upgrading of teaching. Information is provided concerning the inservice training workshops, special materials, and programs for clinical services, speech improvement, behavioral management, motor development, and visual perception. The planned followup, evaluation, and project timetable are presented. (JD)

EDO 40534



INSTITUTE  
UNIVERSITY OF SOUTH FLORIDA  
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# *PAPERS and REPORTS*

THE EARLY IDENTIFICATION AND REMEDIATION OF LEARNING PROBLEMS IN  
ELEMENTARY SCHOOL CHILDREN AS AN ATTEMPT TO INCREASE SUCCESS  
IN THE CLASSROOM: A PROJECT PROGRESS REPORT

by  
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Volume 1, Number 3  
1970

ED 005 1197

One volume of Papers and Reports (P&R) of INSTITUTE III: Exceptional Children and Adults, is issued each academic year. The frequency of individual numbers will vary from volume to volume.

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ED040534

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PROBLEMS IN YOUNG ELEMENTARY SCHOOL CHILDREN AS AN  
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A PROGRESS REPORT

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## ACKNOWLEDGMENT

One of the strengths of the present project is that it has represented a truly cooperative effort on the part of several different agencies at the Local, State, and Federal levels. The project has been funded by the Florida State Department of Education, through Landis Stetler, Director of Education for Exceptional Children; the United States Office of Education, through the Division of Research, Bureau of Education for the Handicapped; the Hillsborough County School System; and INSTITUTE III: Exceptional Children and Adults, University of South Florida.

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## Introduction

The present project has as its major concern, the demonstration of the efficacy of an intensive intervention program in assisting young elementary school children with demonstrable learning problems to achieve a level of success that would permit them to be retained in the regular classroom. Two major principles have guided the development of the project. First, the program has as its primary criterion of success the level of functioning of the child in the regular elementary school classroom. All factors such as intelligence, social maturity and emotional adjustment are important, then, only insofar as they are related to and contribute to the child's success in the classroom. Second, it is recognized that the value of the program will come in large part from the implications the knowledge that is gained will have for the education of learning problem children within the educational systems in Hillsborough County, in the State of Florida and nationally.

It is understood that no educational program of significance is developed within a vacuum, but rather should, ideally, reflect the current state of the art in its basic underlying assumptions and in its manifest prescriptions. Following is a description of the basic premises upon which the present project has been based. First, to make the maximum impact upon a child, an intervention program should occur as early as possible, for at least two

reasons: it is important to begin work with a child during the years of most rapid growth, which of course is during the early years of development; and, it is important to begin work with a child before he has had the negative effects of inappropriate learning and the accompanying frustrations experienced as a result of continuous failure. (Frostig, 1967a; Haring & Ridgway, 1967; & McGahan, 1962).

The second basic premise has to do with the belief that an intervention program, to succeed, must not itself contribute to the already powerful forces that work toward the isolation of the learning problem child from the mainstream of life which is most readily available to him through his regular public school classroom. The implications of this premise carried to its logical extreme would mean that ideally all children would remain within the original school situation regardless of the nature of their learning problems, and intervention procedures would be integrated within the regular classroom activities. Though this might be a statement of theoretical importance, it is recognized that this is not possible nor even desirable in many cases, given the reality of the present education system, and for many children the special attention they need to achieve ultimate classroom success may have to be provided in special settings. Because of this reality-based necessity, continued effort must be made to assure wherever possible that both the

means and the ends of the special training to which a child is subjected have a close correspondence and a direct relevance to the goals of the regular classroom, and that the problems of re-entry should be given the highest priority.

The conception of each child as representing a unique constellation of competencies and performances constitutes the third basic premise upon which this project rests. It is recognized that there are a variety of reasons why children may fail to reach any given criterion of success in the regular classroom, and that to be truly effective, programs of special education must take these basic differences seriously. Ideally, each child constitutes his own 'diagnostic' category and should have an educational program designed to fulfill his idiosyncratic needs, and in many specific instances of program design, this is entirely possible. However, it also is recognized that each child shares with certain other children similarities in the reasons why he is not succeeding in the classroom, and the designing of comprehensive intervention programs is greatly facilitated by taking these commonalities into account. The overriding concern, in any case, is to match the appropriate training procedures with the needs of a specific child in order to reach an appropriate end state. (Bannatyne, 1968; Bateman, 1967; Edgington, 1967; Frostig, 1967a; & Frostig, 1967b).

The plan of instruction designed for each child essentially has been based upon the goals that have been determined by the Hillsborough County public schools, as the primary goal of the intervention program is to deal with an individual child's learning deficiencies in such a way as to permit his successful re-entry into the regular classroom. The guidelines which reflect the philosophical underpinnings upon which the intervention program rests involves six major factors.

First, though the overall goal of the program remains the same for every child, the procedures to reach those goals would vary according to the needs of the child. For example, though it would be possible to define what any child would have to demonstrate in the way of word skills in order to maintain a minimal level of success in his third year of elementary school, a child who showed a deficit in this area that was correlated with previous environmental inadequacy would be approached in a different way than a child with perhaps the same overall level of deficit, but where the deficit was correlated with a perceptual inadequacy (Kirk & Bateman, 1962 & Steele, 1967).

Second, the specialized training is being carried out within the class setting and by the regular teacher. This is an attempt to reverse the trend to categorize and label individuals as mentally retarded, perceptually handicapped, etc. Rather than send children out to the experts, the experts instead will

be brought in to consult with the regular teacher.

Third, the goal of the entire project can be seen as residing within the inter-face between the child and his learning environment. On the one hand we work with the child to develop the necessary skills that will allow him to respond to certain demands placed upon him by his learning environment, and at the same time we work with the learning environment to that it will be able to accept the skills that the child is able to develop.

Fourth, by definition, the children who are a part of the present program have demonstrated a retarded rate of development in certain crucial skill areas. There are two problems that emerge as a result of this slow development. First, the child is behind in his performance at the moment he was identified for this project. And second, even if one could envisage a magical intervention program that would bring this child up to a point where his performance level would be within the normal range, the problem would still exist of the rate of development in the future. In other words, if this child were returned to a regular class after his year within the intervention program, would he be able to maintain his gains and keep up with his peers through the years ahead? The intervention program has been focused not only on the acquisition of specific content, but also on the more general issues of the learning to learn phenomena. In some cases this has revolved around the teaching

of specific strategies of learning, and in other cases it revolved around the development of achievement motivation (Bereiter & Engelmann, 1966).

Fifth, recently behavior modification techniques have been brought to bear on the problems encountered in the classroom in classes for emotionally disturbed children. These techniques have been spelled out in some detail by Hewitt (1967) and others in their discussions of the engineered classroom. The present intervention project has attempted to integrate this behavior modification approach with the other educative procedures used in an attempt to create a learning milieu in which the most efficient work is possible.

Sixth, one of the most important approaches to instruction utilized by the project staff has been the educational case conference. A group of professionals meet together to plan the strategy by which each child in the program receives a custom tailored, comprehensive education program that will move him from a position of severe failure in the classroom to a position within the normal range of success. This multidisciplinary team has included the Project Coordinator, who is a developmental psychologist with experience in the area of mental retardation and research design; the Curriculum Coordinator, who is an educator with experience as a primary level supervisor; the Curriculum Consultant who is a special educator within the

University faculty with extensive experience in curriculum development, the Clinical Services Coordinator, who currently is an advanced graduate student in the Emotionally Disturbed Program, and relevant county school personnel, including learning specialists, speech people, school social workers, and of course, teachers.

### Research Design

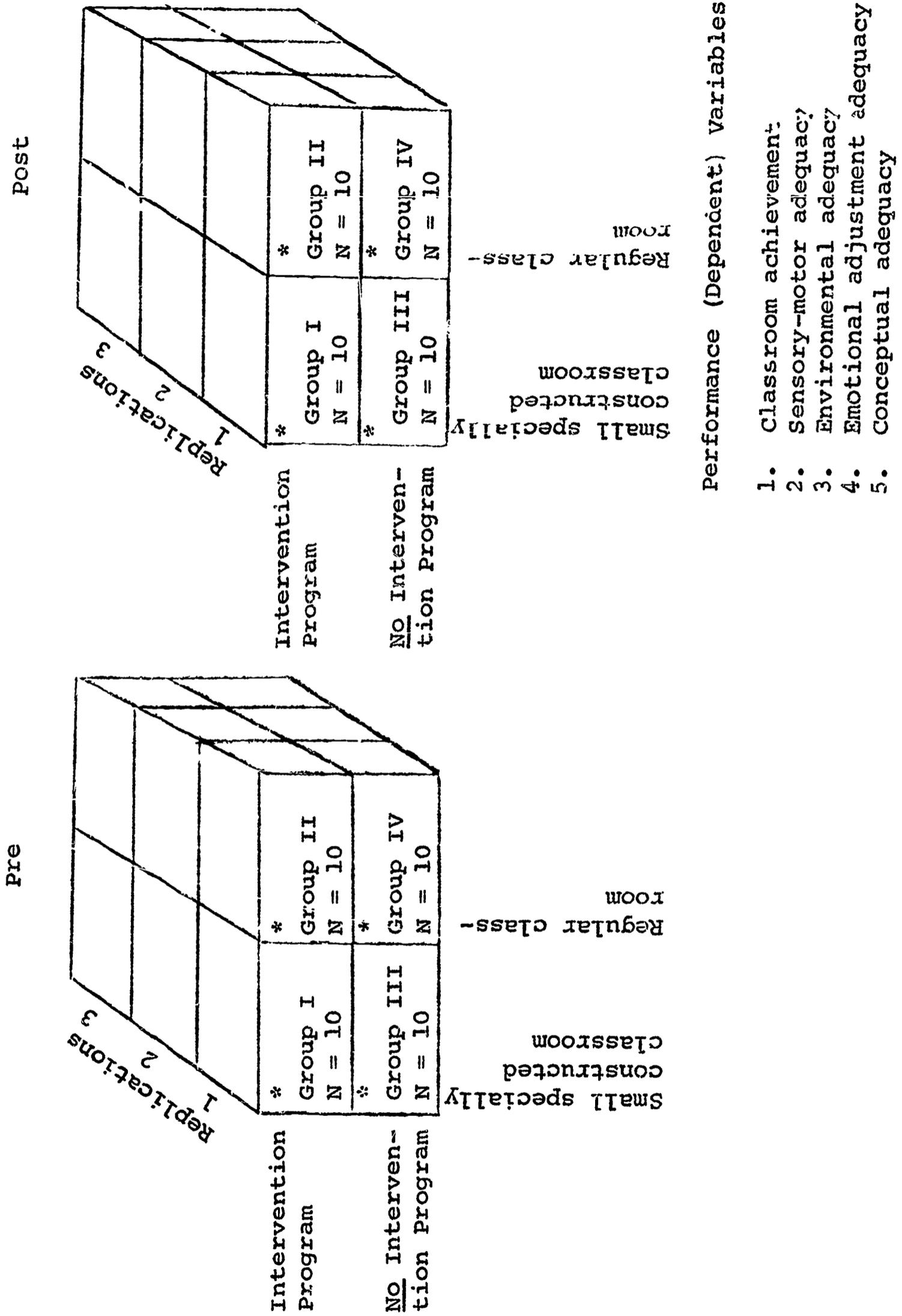
The research design that has been evolved from the above basic premises essentially represents an attempt to answer two questions. First, by bringing to bear the knowledge that we have available in the professions relevant to the education of children, through the systematic and timely application of an intensive and comprehensive educational program, is it possible to intervene in the development of the massive patterns of classroom failure so evident in a significant segment of our elementary school population? And second, is this intervention program better carried out within a self-contained special class setting, or can it just as effectively be carried out within the context of the regular classroom milieu?

The research design contains four basic groups. Group I is receiving the intervention program within a self-contained classroom setting. Group II is receiving the intervention program within the regular classroom setting. Group III receives no special intervention program, but consists of a small, self-

contained classroom setting. This group controls for the possible effects of simply having a small class with which to work. Group IV is receiving no special intervention program, and consists essentially of the regular class setting as it occurs in the county school system at the present time. The use of this design allows us to assess separately the contributions that size of class and intervention program each makes to the increased success in the classroom of learning problem children. One additional factor has been included in this design. There is overwhelming evidence that suggests that the teacher himself is one of the most important variables in determining the degree of success shown by young children who demonstrate learning problems. This fact must be taken into account in intervention research. Therefore, to assure that the results of this study are due to the intervention programs and not due to fortuitous placement of a 'super' teacher, the basic four group study is being simultaneously replicated three times. This means that the design calls for the formation of twelve groups, three groups similar to Group I above, three groups similar to Group II, etc. (see Figure 1).

The measurement of the dependent variables (i.e., the assessment of the specific abilities of the children in the project) will occur twice, at the start of the project to assess the level at which these children enter the project, and again

Figure 1: Research Design of the Early Identification and Remediation Project



Extended Version of Lindquist Type III Design

at the close of the project, after the year of the intervention program. Thus, the complete design will involve four dimensions, three between subject dimensions (intervention program-no intervention program; small class-large class; and replications) and one within subject dimension (pre-and post-intervention). The analyses of these data will be done using an extended version of Lindquist Type III design (Lindquist, 1953).

One additional note needs to be made concerning the selection of the dependent variables for the present project. Since the entire project is based upon the belief that children can demonstrate difficulties in the classroom for a variety of reasons, information will be collected on each of these underlying causes of lack of classroom success. The approach suggested here is to conceive of success in the school classroom to be determined by a set of general factors, which combine in some way to create a success quotient ( $S_q$ ) for each student. What these factors might be can rationally be set forth, and a tentative list includes the following: sensory-motor adequacy, environmental adequacy, emotional adjustment adequacy, and conceptual adequacy. Problems in the first area include visual and auditory deficits, motor response deficits as in cerebral palsy, and perceptual abnormalities as seen in figure reversals, figure-ground problems, etc. Problems in the area of environmental adequacy include cultural deprivation and environmental

shift as in the cases of children who have moved to our country from a foreign country. Problems in the area of emotional adjustment adequacy include extreme and inappropriate behavior in the classroom such as problems of withdrawal and control (acting out), and inappropriate styles of relating to others. Problems in the area of conceptual adequacy include deficits in abstract thinking, concept formation and certain types of problem solving. Assessment of each of these components leads to a better understanding of a particular child's inability to succeed in the regular classroom and should lead to insights into the most efficacious ways of intervening to reverse the established pattern of failure.

Using the multiple factor approach to learning problems, it is possible to conceive of at least two general patterns of failure. The first pattern is where a child shows a massive deficit in a single area with relative strengths (within near normal limits) in all other areas. The gross disturbance in this single area would have the effect of lowering the child's IQ to the point where he would be eligible for a special class. The second pattern of failure is where a child shows lesser deficits in several areas, but no massive deficit in any one. These lesser deficits would combine to reduce the child's IQ to the point where he also would be eligible for a special class. (A third pattern of failure, that of massive deficits in many

areas, would lead to such a reduced level of classroom success that the child would most likely simply be kept out of school for the first year.)

Adequate SQ, then, is determined by a adequate level of functioning in each of the above four areas. Measurement of each of these areas leads to the development of a regression equation that indicates the relative importance of each factor in producing classroom success for a particular child in a particular classroom setting. Just as an individual child may show differential strengths and weaknesses, individual classroom situations may also show strengths and weaknesses. For instance, a particular teacher might create a class situation where a great deal of weight would be placed upon the factor of emotional adjustment, and, in fact, a child might be able to remain within the class (e.g., retain the minimum needed level of SQ) as long as he met a certain level of success on this single dimension. One strength of this manner of conceptualizing classroom success is that it allows a principal to objectively match his students' pattern of strengths and weaknesses with those of his teachers.

The measurement of these four major areas of competency can be accomplished by the use of standard instruments now available in the professional literature.

### Selection of Project Children

It is intended that the present project have implications for the education of learning problem children within an entire county school system. It is important, then, that the problems identified are actually a representative sample of the whole spectrum of problems encountered in the county. This requirement has been met by selecting learning problem children from a sample of schools that draw their students from a broad cross section of the entire county school population. In this way, the results of this study will not have to be restricted to, for instance, an all black population or an all white population.

Because the neighborhoods that surround a particular school are so very important in determining the character of that school, geographic location was used as the major sampling criterion. Three major categories were established from which the final project schools were to be selected. These geographic categories included: rural schools, suburban schools, and city schools (see Table 1). Because the basic research design involves three replications with four schools in each replication, one replication was carried out with each of three types of schools. Thus, four rural schools, four suburban schools, and four city schools were selected for inclusion in the project. Additional criteria employed in the selection of project schools included: a) there had to be space sufficient to meet the needs

Table 1Characteristics of Project Schools

School Name	Racial Mix	Occupation of Head* of Household Adaption of Hollingshead Scale 1 to 8(one is high)	Educational* level of Head of Household Grade Level
1A Citrus Park	25:1 White	4.5	11.3
1B Miles	100% White	3.96	12.2
1C Carver	100% Black	5.9	9.9
2A Thonotosassa	3:1 White	5.2	9.7
2B Twin Lakes	100% White	4.2	11.3
2C Orange Grove	1:3 Black	6.2	9.4
3A Cork	100% White	4.66	10.24
3B Alexander	100% White	4.7	10.8
3C Bryan Tampa	1:3 Black	5.9	9.3
4A Palm River	100% White	5.11	10.2
4B Forest Hills	100% White	4.45	11.78
4C Edison	10:1 White	5.07	10.42

Average of 3 Intervention, Small class schools (1): Occupation = 4.8; Grade level = 11.1

Average of 3 No Intervention, Small class schools (2): Occupation = 4.5; Grade level = 10.1

Average of 3 Intervention, Regular class schools (3): Occupation = 5.1; Grade level - 10.1

Average of 3 No Intervention, Regular class schools (4): Occupation = 4.9; Grade level - 10.8

Average of 1 Rural Schools (A): Occupation = 4.9; Grade level=10.3

Average of 5 Suburban Schools (B): Occupation =4.3; Grade level =11.5

Average of 4 Urban schools (C): Occupation=5.8; Grade level=9.8

\*Based on randomly drawn samples of 20 families of second, fourth and sixth grade children, a total of 60 families for each school.

of the project, which in the small classroom schools, involved space for an additional classroom; b) certain schools in the county were overloaded with special projects, and for that reason a certain number of schools were dropped from consideration; and c) there were a few principals that the county school personnel felt would not be willing to cooperate with the project, so their schools were also excluded.

A list of schools was finally drawn up on the basis of the application of the above criteria. This list contained the names of about 24 schools or twice as many as was needed for the project. At this point the school personnel simply picked the 12 of the 24 schools that they felt would be most appropriate for inclusion in the project.

One strategy in intervention research is to randomly assign subjects to the various treatment and comparison groups. However, if this procedure had been carried out in the present study, it would have meant assigning children to schools that they would have not ordinarily attended. This would have created difficulties in transportation that would have defied solution. An alternative was carried out. Rather than randomly assign individual children to the various groups, schools have been randomly assigned to groups. As an example, imagine schools A, B, C, and D, all within a single geographic category. As outlined above, these four schools would already have been

selected to represent the entire first grade school population of that category. In effect, these schools have been matched on certain crucial variables, such as socio-economic class, racial balance, and urban-rural makeup. After the initial selection had been made, each of these four schools was assigned randomly to one particular treatment or comparison group. Thus, school A was assigned to the group that consisted of the intervention program carried out within a small, self-contained class-room; school B was assigned to the group that consisted of no intervention program and a regular classroom setting; etc. This meant that all children within any one given school were to receive the same treatment, but because the schools were previously matched on crucial variables, the differences that occur between groups would be due to the planned intervention programs, and not due to school differences. The random assignment of four schools to the four treatment groups was repeated in each of the three geographic locations (rural, suburban, and city).

Because there are twelve treatment groups in total, and because one school has been assigned to one treatment group, the present research design involves a total of twelve schools. The procedures to identify learning problem children was applied, then, to the entire first year student population of these twelve schools, and it was from this population that the subjects for the present study were selected. Ten children from each

school was selected to participate in the study, and their assignment to the appropriate group was based upon the group assignment of their respective schools. Within each school, all ten children selected were placed in the same classroom, either within the small, self-contained classroom setting or the regular classroom setting. In total there are twelve classes of ten children each, a total of 120 children.

Ideally, intervention, in the form of special help in the classroom, should occur before a child has experienced any failure at all, that is, the intervention should begin on day one of the first grade. However, it was not possible to observe this population of first grade school children before the start of their first year. For this reason, and also the fact that many children need a period of time in which to adjust to the school situation before it is possible to determine whether or not they are likely to have important learning problems, subject identification for the present program was carried out with children after they had completed most of their first year in school. The children who were identified already had demonstrated a pattern of failure severe enough that, if it was to continue, would ordinarily signal the consideration of placing the child within a special class setting, such as an EMR class, a class for the perceptually handicapped, or a class for the emotionally disturbed.

The identification was carried out using the two criteria of psychometric test scores and teacher's recommendations. The first step in the subject identification phase consisted of the administration of the Metropolitan Achievement Test primary 1 level to all first year students in the 12 project schools. This test administration was carried out, as is usually the case in the County, by the classroom teachers under the supervision of their local testing coordinator. Each of the teachers involved in the testing had had previous experience administering the achievement test, and had attended a work-shop on group administration of achievement tests. The tests were scored and tabulated by project personnel. Conferences were then held individually with the principals and first year teachers of each of the 12 project schools. At this time, a list of the test scores of all the children taking the test was presented to the teachers, and they were asked to select 10 children from this list who would benefit from the type of intervention program that was being planned for the upcoming school year. They were told that they could select these 10 children from those that scored within the bottom quartile of the reading and the arithmetic sub-tests of the Metropolitan Achievement Test. Three additional subject selection criteria were also used. First, it was necessary for the 10 children selected for each class to include at least four boys and at least four girls. Second, it

was necessary that each child selected for the program would be entering his second year of public school education the following fall. Thus, it would have been quite all right for a child to be selected for inclusion in the project if he was to be retained in the first grade in 1969. However, children that had already been retained in first grade, in 1968, were not eligible for inclusion. A good deal of time was spent in explaining to teachers the different kinds of failure patterns that might exist among their children with the intent of conveying to them that it was necessary to have as representative a sample of as many different problems as possible in our project classrooms. The teachers were specifically told that children with behavior problems, suspected perceptual problems, problems related to culturally disadvantaged status, and problems related to mild mental retardation, would all be eligible for inclusion. It must be noted, of course, that the selection procedures for children differed somewhat as a function of type of school involved. The overall achievement level of the children from the suburban schools, for instance, was quite a bit higher than the overall achievement level of children from the city schools. This would mean that it would be possible for a child to be selected for inclusion in the project from a suburban school with an achievement level that might be considered to be close to the normal range, if he had come from a city school.

The third additional selection criterion used was the likelihood that the child would remain in the school for the upcoming academic year. In some few cases, a teacher already knew that a family was about to move out of her school district, and so a child from this family would not be eligible for inclusion in this project.

Through the application of the above criteria, it was possible to select 10 children from each school, to be included in the present project. In addition, because of the anticipated problem of attrition, five additional children were selected from each school to be used as alternates. In this way, it would be possible to replace a child if circumstances made this necessary. This turned out to be a very fortunate procedure, for in fact, several children were lost from among the original lists of 10 children. It was determined at this time that children would be replaced up to January 1st, 1970. At that time, if a child was lost no replacement would be made. (See Tables 2 and 3).

#### Teacher Selection

The selection of teachers was a difficult procedure and not entirely successful. Initially, a set of criteria had been established that would provide the basis on which a gross matching of teachers for the 12 project groups could be carried out. However, the application of these criteria to the actual

Table 2Characteristics of Project Children

School Name	Sex Characteristics	California Test of Language	Mental Maturity IQ Non-Language
1A Citrus Park	6 boys, 4 girls	89	93
1B Miles	4 boys, 6 girls	98	97
1C Carver	6 boys, 4 girls	76	80
2A Thonotosassa	6 boys, 4 girls	85	86
2B Twin Lakes	7 boys, 3 girls	90	89
2C Orange Grove	7 boys, 3 girls	78	84
3A Cork	4 boys, 6 girls	94	94
3B Alexander	6 boys, 4 girls	91	88
3C Bryan Tampa	5 boys, 5 girls	69	63
4A Palm River	5 boys, 5 girls	91	87
4B Forest Hills	5 boys, 5 girls	95	83
4C Edison	5 boys, 5 girls	84	85

Average Intervention, Small Class (1) CTMM  
Language IQ=88; CTMM Non-Language IQ=90.

Average No Intervention, Small Class (2) CTMM  
Language IQ=84; CTMM Non-Language IQ=86.

Average Intervention, Regular Class (3) CTMM  
Language IQ=85; CTMM Non-Language IQ=82.

Average No Intervention, Regular Class (4) CTMM  
Language IQ=90; CTMM Non-Language IQ=85.

Average Rural School (A) CTMM Language IQ=90;  
CTMM Non-Language IQ=90.

Average Suburban School (B) CTMM Language IQ=94;  
CTMM Non-Language IQ=89.

Average Urban School (C) CTMM Language IQ=78;  
CTMM Non-Language IQ=78.

Table 3Characteristics of Project Children

School Name	Metropolitan Achievement Test Stanine Scores			
	Word Knowledge	Word Discrimination	Reading	Arithmetic Concepts
1A Citrus Park	2	2	3	3
1B Miles	4	3	5*	5
1C Carver	2	2	2	1
2A Thonotosassa	2	2	3	2
2B Twin Lakes	2	2	2	3
2C Orange Grove	1	1	3	2
3A Cork	2	3	3	2
3B Alexander	3	4	2	4
3C Bryan Tampa	1*	1*	1*	1*
4A Palm River	2	2	2	4
4B Forest Hills	2	2	2	2
4C Edison	2	2	3	4

\* Testing conditions made test scores invalid.

---

Average Intervention, Small Class (1) MAT Stanines

WK = 2.7; WD = 2.3; R = 3.3; AC = 3.0.

Average No Intervention, Small Class (2) MAT Stanines

WK = 1.7; WD = 1.7; R = 2.7; AC = 2.3.

Average Intervention, Regular Class (3) MAT Stanines

WK = 2.0; WD = 2.7; R = 2.0; AC = 2.3.

Average No Intervention, Regular Class (4) MAT Stanines

WK = 2.0; WD = 2.0; R = 2.3; AC = 3.3.

---

Average Rural School (A) MAT Stanines

WK = 2.0; WD = 2.3; R = 2.8; AC = 2.8.

Average Suburban School (B) MAT Stanines

WK = 2.8; WD = 2.8; R = 2.8; AC = 3.5.

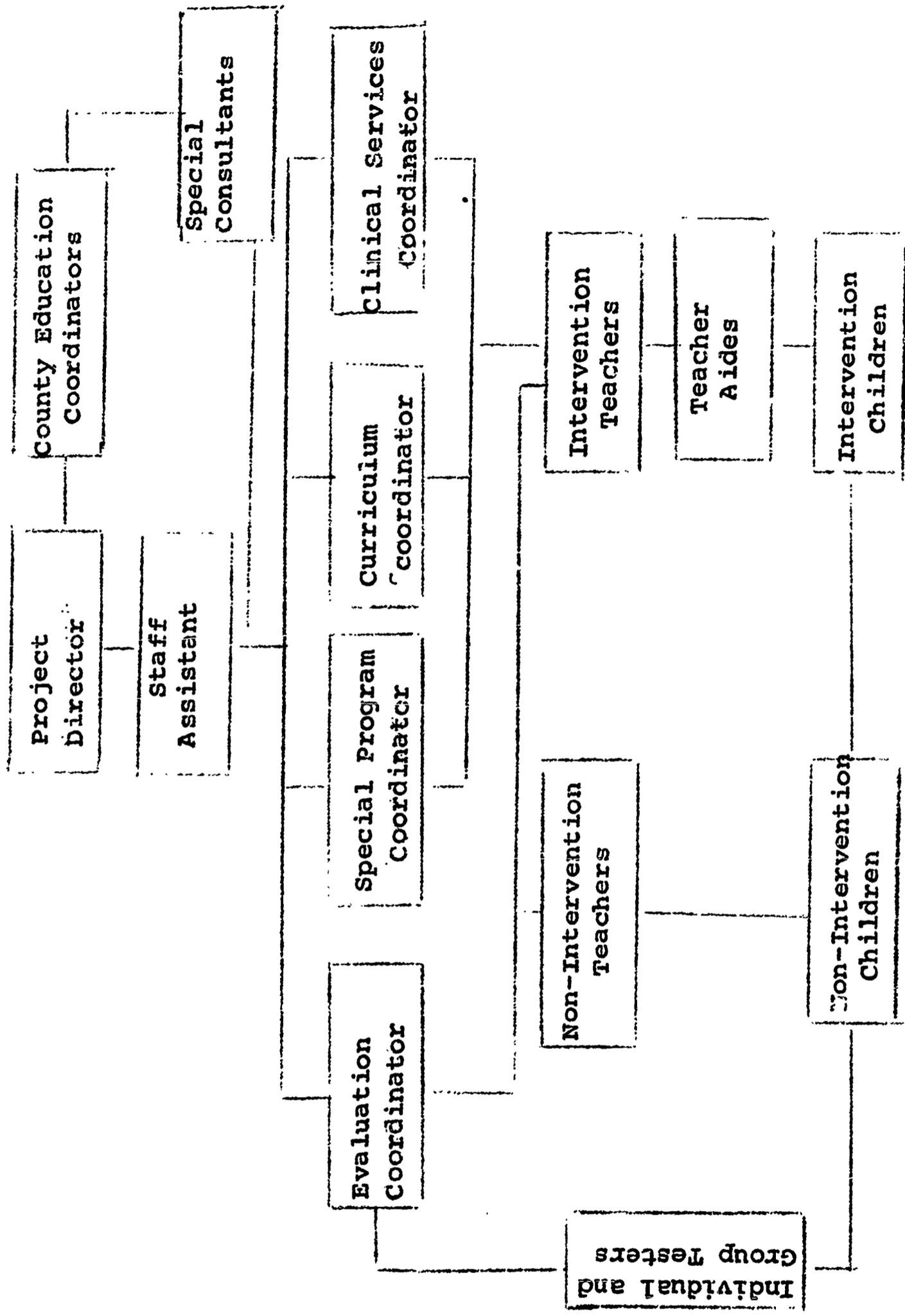
Average Urban School (C) MAT Stanines

WK = 1.5; WD = 1.5; R = 2.3; AC = 2.0.

selection procedure turned out to be impossible, as it was necessary to choose the project teachers from among a very small group of candidates. The final decisions for including teachers in the project were based upon the recommendations of the county school personnel, including, of course, the principals under whom the teachers would be working. Once a teacher had been hired, the experimental group to which she was to be assigned was determined completely by the assignment of her school.

#### Description of Project Personnel

The final step in the planning phase of the intervention project was to complete the staffing of the project personnel. The final list of people (a total of 79) relating in some way to the various project programs included individuals who ranged from those who were involved 100% of their time for the entire duration of the project to those individuals who were involved in a single task that lasted for only a few hours. The people involved in the project also ranged from those that were paid for 100% of their time to individuals who were not paid directly at all, but rather derived other kinds of benefits for their project participation. The administrative flow-chart portrays graphically the relationships among the central project personnel (see Figure 2).



Project Administrative Flow Chart

Figure 2

The Project Director has the responsibility of coordinating the activities of all people involved in the project. He assures that each component of the project is working smoothly and fits into the total operation. The Project Director also chairs the weekly staff meeting at which time all the professional people involved in the project come together to discuss the problems they are facing and the progress they are making. The Project Director has ultimate fiscal responsibility for the project.

The Staff Assistant has taken over the responsibility of working out the relationships between the project and various administrative units of the University and of the County School System. She has created a permanent office for the project which serves as its home base. She is responsible for the maintenance of all records and monitors the input and output of information concerning the project.

The Curriculum Coordinator provides supervision for the project teachers in major areas of the school curriculum such as reading and mathematics. Her role is also that of general trouble-shooter, and through her extensive school background is an important part of the information exchange between the classrooms and the other project personnel.

The Curriculum Consultant, an assistant professor in the Department of Special Education at the University of South

Florida, has as his major responsibility the development and implementation of the instructional program component of the project. In addition, he has chaired a series of professional seminars attended by all intervention teachers and their aides.

The role of the Family Consultant is twofold: first, she has the responsibility for interviewing each of the 120 project families obtaining from each general background data, and second, she has the responsibility to make this information available to the appropriate project and school personnel. In the cases where she has interviewed families with children in the intervention groups, she has had the responsibility for explaining to them the purposes of the project. Her interviews consist of the administration of a questionnaire to the major care-taking person of the family. In most cases, of course, this person is the mother of the child, but in a significant number of instances the major care-taking person has been a relative, such as a grandmother, or even a friend or neighbor. The purpose of the interview was to make the project and school personnel aware of problems that existed in the home that might be contributing to the child's difficulty in school. The family consultant did not engage in counseling of the mother on how to handle her child at home. It was felt that if counseling was needed, it could be provided under the direction of the Clinical Services Coordinator.

The Clinical Services Coordinator's major responsibility is to coordinate the psychological and education services for the project children. This task is described more fully in a later section.

The Evaluation Coordinator has the responsibility of supervising the assessment of the progress of the project children, through both group and individual testing procedures.

The selection of the teacher aides was carried out in close cooperation with the coordinator of cooperative education students at the University of South Florida. The teacher aides were selected from among a large number of applicants who all had certain qualifications in common. First, each applicant had made the career decision that she was to become a teacher after finishing her undergraduate schooling. Second, she was a major in education or an education related field, such as psychology. Third, she had finished some basic work in the field of education, but had not yet entered into the formal internship phase of her training. This meant that applicants were all end-of-the-year sophomores or beginning-of-the-year juniors. Other criteria used in the selection of the teacher aides were satisfactory academic achievement, enthusiasm, and judged over all ability to provide a good behavioral model for the project children. Each aide works full time in her appointed classroom, and her schedule is the same as her regular classroom teacher.

Guidelines were established for the six intervention teachers in the use of their aides, although it was recognized that the specific responsibilities for the aides would of necessity be developed individually by teachers as a function of the structure of the learning environment in each classroom. First, the aides were not simply clerks to be given the menial tasks of the classrooms, such as material preparation and administrative paperwork. Wherever possible the aides were to be integrated into the actual teaching activities going on in the classroom and were to be viewed by the teachers as a crucial part of the total educational delivery system. Second, in the large intervention classrooms the teachers were informed that whenever possible, their aide should focus her activities upon the ten project children.

Other project personnel will be described under their relevant intervention components.

#### Orientation of School Personnel

A series of orientation meetings were held with the principals and the teachers of the six intervention classrooms during the middle of August, 1969, before the county public school system opened for business for the current academic year. During these meetings the intervention project was carefully described and the major goals outlined. Several major points

were made at these meetings. First, it was stressed that the over-riding goal of this project was to prepare the project children for successful adaptation to the regular class-room. The intervention class-rooms were to be conceived of as special opportunity class-rooms where children were placed who had experienced difficulty in making sufficient academic progress within the normally available school milieu. This new educational experience was designed, however, to minimize the degree of isolation from the educational mainstream that these children had begun to experience, rather than to increase it by constructing a special environment that had as its main effect solidifying and formalizing this isolation, as is the case, unfortunately, with some of our current "special education classes". It was explained that no service would be rendered to a child of seven if he was labeled educable mentally handicapped, or emotionally disturbed, etc., before he had been given a chance to perform in a learning setting where his individual strengths and weaknesses in academic and non-academic areas were carefully attended to and carefully utilized in the development of the program of instruction to which he was to respond. The children selected for inclusion in the project intervention classrooms were not being "left back" for a second go-around in first grade, nor were these children being socially promoted to a regular second grade classroom. Rather, they were

being placed in what can best be described as a special opportunity class room where the progress they had made during the first year of their school experience would be built upon, both in terms of specific, relevant curriculum content, and in terms of acquiring general learning how to learn behavior, always with the understanding that next year they would be placed again within a regular class room at the appropriate level.

The second major point discussed at these orientation meetings was that the over-all curriculum to be used for the special class rooms would be basically what was prescribed by each of the individual schools. It was not the intent for project personnel to provide teachers with a totally new curriculum, but rather to demonstrate that children could be given sufficient specialized help through up-grading what normally would go on in normal class rooms to enable them to be retained in the education mainstream as successful students. The goal was not then to provide esoteric, unattainable, curriculum components, but rather to up-grade what was already available. To provide children with some special curriculum, for instance, in the area of reading, might actually increase the amount of difficulty that they would experience in returning to their regular class rooms the following year.

The third major aspect of the orientation meetings had to do with a brief outlining of the various intervention components, which included teacher aides, in-service workshops, supervision provided by a curriculum coordinator, twice monthly professional seminars directed by the curriculum consultant, a diagnostic testing program, a family consultant, availability of special instructional materials, clinical services staffing, and various special programs, such as a speech improvement program, a motor development program, a visual perception program, and a behavioral class room engineering program.

And finally, the problem was discussed of how to sell the parents of the proposed target children on the intervention project. It was decided that the final responsibility of introducing parents to the project would rest with the various school administrations. In every case where it was possible, the principal or classroom teacher was to make the initial contact with the parent, preferably through in-person communication. This communication was followed up with an interview by the family consultant, and it was at this time that specific details concerning the nature of the intervention program could be given out to interested parents. In only a single case did a parent decide not to allow her child to become part of the program. The reason she gave for her refusal was that her son might be labeled mentally retarded if it were known that he had been included in any type of special class.

During this pre-school period, orientation meetings were also held with the principals and teachers of the non-intervention class rooms.

The three teachers in the small, non-intervention classrooms were simply told that they were participating in a study to see if the children who had been identified as learning problem children could be helped by identifying their problems early in their school careers and then providing them with the intensive instruction made possible by small teacher-student ratio classes. They were told that periodic meetings would be held when they could discuss any problems that might arise in their class rooms, but that no new demands would be placed upon them in carrying out their usual class room activities. That is, they were told that whenever possible they should take advantage of this opportunity to provide their children with individualized instruction utilizing the usual curriculum provided by the public school system.

The teachers in the regular size, non-intervention classroom groups were told that they were part of a larger project that had to do with the identification and education of learning problem children. They were told which children in their class rooms were to be the control children and they were told that these children would be assessed at various points during the year. They were also told that their role was to provide

educational services for their children as they would ordinarily do. Certainly the effect of talking with these teachers and orienting them to their role in the total project may have had some effect upon their handling of the children. Though this effect probably was not very great, it was necessary to indicate to both intervention and non-intervention teachers that they would be observed to partially control for the Hawthorne effect.

The teachers and principals in the three regular classroom schools were of course disappointed that they had not been chosen for other types of participation in the project. However, they were quite willing to play their role because they saw the possibility of the results of the project leading to county-wide change in the structure of education for elementary school children.

#### Components of the Intervention Package

The intervention package described in its general aspects in a preceding section consisted of six major components. One, the use of teacher aides, has already been described in some detail. Another significant component in this package has been the up-grading of teaching in the various intervention classrooms. It was part of the philosophy upon which the project rested that a significant portion of the intervention program

would be determined by the curriculum already in use at the project schools. Of course, this meant that to some extent the quality of instruction would be dependent upon the type of curriculum prescribed by the school and of course by the teachers' own competencies. It was felt that the over-all level of competency could be increased in two ways. First, the curriculum coordinator, an experienced teacher in her own right, was to meet with teachers on a regular basis to provide supervision in the major curriculum areas. And second, a series of training workshops were held for all teachers and their aides. The design of these workshops was worked out in cooperation with the county school system and in most cases utilized their professional supervisors. Workshops were held on such topics as: psycho-motor development; music instruction; the use of audio-visual materials in instruction; literature and the use of puppets in a general language arts program; and behavioral management in the classroom )for a complete list of workshops, see Table 4).

The instructional personnel responsible for the workshops were oriented toward providing teachers with procedures and activities that could be utilized in the classroom, rather than attempting to give them an over-all view of the various curriculum areas. In every case, hand out materials were provided teachers which further exemplified and clarified the various workshop topics.

Table 4

<u>Dates</u>	<u>Project Workshops</u>	<u>Topics</u>
Saturday, October 11	1. Introduction to diagnostic prescription Model of instruction 2. Psycho-motor development	
Wednesday, October 15	Music instruction	
Saturday, October 18	AAAS science program: Part I	
Wednesday, October 22	Use of interest centers and experience charts in reading instruction	
Saturday, October 25	AAAS science program: Part II	
Wednesday, October 29	Use of audio-visual materials in instruction, including; listening centers, tape recorder, overhead projector, and language master	
Wednesday, November 5	Literature instruction: The use of puppets in story-telling	
Wednesday, November 12	Art instruction	
Saturday, November 15	Use of behavior modification in the classroom	
Wednesday, November 19	Identification and management of speech problems in the classroom	
Wednesday, December 3	1. Social studies instruction 2. Mathematics instruction	
Saturday, December 6	Perceptual-motor development	

In most cases the workshops were very helpful and teachers were enthusiastic to receive what essentially amounted to a refresher course in these various curriculum areas. Follow-up was provided to each of the workshops through the curriculum coordinator. In certain cases, the workshop presentations were used as introductions to special programs that were to be carried on by the project personnel, for instances, in the areas of behavior modification, speech problem identification, and perceptual-motor development.

Another important component of the intervention project has been the purchase of special materials needed by teachers to pursue their various instructional goals. The purchase of these materials was governed by three criteria: a) Materials that ordinarily would be provided by the school system were not to be purchased with project money. Basic items like text books and such were to be purchased through regular channels. b) Materials to be purchased had to be incorporated in some set of curriculum goals as proposed by the teacher. c) Items to be purchased had to be attainable easily and without great cost.

The materials purchased up to the present point generally have fallen within two categories. The first category has to do with clearly identifiable professional materials to be used for the implementation of curriculum goals that were not

ordinarily obtainable through the usual school sources. For instance, one teacher felt that the instruction of phonics could be facilitated by the use of an additional set of materials not ordinarily used in her school. The second general category has had to do with rather innovative and creative attempts to set up learning situations that required some general back-drop. Examples of these types of materials include various types of construction materials.

One very interesting sidelight that has occurred as teachers have been assisted in obtaining the materials that they needed to facilitate their instructional program has been the variability that existed among them as to their resourcefulness and independence. Some teachers seemed to turn up needed materials from every corner of the school building, while other teachers were willing simply to do without a material because it was not within their immediate vision. Undoubtedly this would be an important dimension in the evaluation of teacher effectiveness. It would not be surprising that this teacher difference carried over into other perhaps even more important areas such as trying to obtain for their children the use of available facilities in the school system, such as social work services, psycho-diagnostic services, etc.

The clinical services program has developed into one of the most important components of the intervention package, and

is now being coordinated by the Clinical Services Coordinator. The program centers around the clinical case conference, the primary purpose of which is to provide a forum to discuss the difficulties that individual children are experiencing in their various classrooms. The format of these conferences has gradually changed over the past several months to the point now where typically from two to four children from one or two schools are staffed at each meeting. Personnel involved at these conferences include the classroom teachers, the aides, the school principals, in many instances the school social workers, the school speech therapists, the school learning specialists, and in general, anyone else who could contribute to the identification and remediation of the problems of the children discussed for that day. By involving these professionals, it is possible to bring together information concerning a child's specific difficulty from many different points of view, and thus to broaden the base of information needed to produce solutions to the problems discussed.

Another important purpose of these conferences is to coordinate the psychological and education services for the project children. In many cases a child and his family may be receiving services from a wide variety of local and state agencies, such as the county school system, the county and state welfare and health agencies, and even from certain private agencies, with

each agency acting autonomously without a picture of the total services involved. In these cases the Clinical Services Coordinator acts as a central clearinghouse for all the information that exists pertaining to a particular case, opening up lines of communication between the various relevant agencies.

Another point is worth mentioning in this context. An attempt always is made to provide services for the project children in such a way as to utilize existing community agencies rather than to try to provide the services through the project. It is recognized that the current project will be in existence only through the end of the 1969-1970 school year and therefore, to have services continue beyond this point it is necessary to have them integrated within existing, ongoing, service agencies.

A further goal of these case conferences has been to attempt to involve the department of school social work in a training program designed to introduce teachers and principals to the types of procedures required to obtain services from the social work department. In some cases, the communication between the department of school social work and the individual schools requiring their services has not been particularly well worked out. An attempt was made during the case conferences to establish a model procedure which teachers needing social work services could follow even after the project had ceased to exist. A further activity supervised by the Clinical Services

Coordinator has been the organization in each of the intervention classes small activity groups especially for those children who need the experience of learning more effective social skills. The majority of these children have a very low self concept which interferes with their ability to relate in more positive ways with their peers. This difficulty has an important effect on their over all adjustment in school. The selection of children to participate in the groups was made primarily on the basis of teacher recommendation, with special consideration given to how each child might benefit from this type of learning experience.

The groups were designed with the major goals of 1) providing supervised activity after school, 2) structuring activities which would focus on building a more positive self concept, and 3) providing opportunities for developing more effective coping devices for handling different problem situations. The degree of structure, the choice of activity, and the materials used have been generally modified to best meet the needs of the particular group involved. The groups in the inner city schools, for example, have required structured activities focusing on the very basic skills of attending to tasks, learning to share, taking turns, etc., whereas, more sophisticated groups have been able to work on more unstructured activities such as recognizing and becoming more comfortable with their feelings,

sharing experiences, and learning to understand some basic principles of behavior, thru such activities as expressive play with dolls, open discussion, various types of role-playing, etc. The materials used in these activity groups include, Why People Act as They Do (Preventive Psychiatry Research Program, 1967), Easy Skits for Youngsters (Ames & MacDonald, 1964), the Fassler series (1969), and Puppet Playmates (Instructor, 1968).

Following are some further examples of specific activities that have been provided as part of the clinical services component to the intervention project.

The first activity to be described had to do with providing one of our project children with a big brother. The rationale behind this service was to provide one little boy with a masculine model with whom he could identify. The home situation was such that the father was absent and the child seemed to show some sexual identification problem. It was noticed in the classroom, for instance, that this little boy was unable to make a deep commitment either to people or to activities. It was hoped that through providing a masculine role model he would be able to establish some commitment to a more meaningful mode of responding. At the same time, the clinical social services person has worked with the mother in an attempt to help her re-structure her relationship with her son. Up to that point, she

seemed to have been unable to take a firm line in any particular direction, and the child was developing into a first class behavior problem in the classroom.

A second example of an activity within the clinical services component involved an attempt by the Clinical Services Coordinator to help a parent accept the possibility that her little girl had a serious visual problem. Apparently this information had been conveyed to the parent before by the little girl's first grade teacher, but no action had been taken, and it was through the assistance of the project personnel that the mother was able to make contact with a competent optometrist.

A final example of the utilization of the Clinical Services Coordinator has been her general screening of all the project children for possible serious behavior problems. In those few cases where it was generally agreed that a child was performing under extreme stress, recommendations were made for more intensive intervention. For example, one little boy was intimately involved in a tragic home situation that involved an attempted suicide by his father and it was felt that he definitely needed some opportunity to face the obviously frightening implications posed by this experience. He and his mother were both referred to the county guidance center for a more in-depth assessment of the situation and for possible longer term remediation.

A special program in the area of speech improvement was developed and implemented as a part of the total intervention package for essentially two reasons. First, it became obvious that the speech performance of the project children constituted an exceedingly important area of classroom functioning, and was clearly related to achievement in most other performance areas. And it was also clear, on the basis of the pretesting with the Templin-Darley Articulation Test, that the incidence of speech problems in the project sample was quite high. Second, it became obvious that the project teachers did not systematically include speech improvement work within their formal instructional programs, though of course some of this work was included in their phonics instruction. It was decided to develop a speech improvement program for each of the six intervention classrooms utilizing Margaret Byrne's (1965) program "The Child Speaks". Initially, the program was introduced to the teachers by one of the Hillsborough County Speech Supervisors. At this time the program procedures and materials were described and a few sample lesson plans were constructed.

It appeared important to the project staff to coordinate the speech improvement work with the work of the local speech therapists and to this end orientation meetings were arranged, first with the speech supervisor and her materials chairman and later with the speech therapists serving in each of the

intervention schools. In this way, it was possible to coordinate the total speech services offered to the project children. Meetings were then scheduled with the teachers and their aides and the speech program was described in detail. At these times it was made clear to the teachers that a speech improvement specialist would visit each classroom on a regular basis and would assist in the implementation of the speech program. Each child in each of the six intervention classrooms has been tested each week for proficiency in the sound presented for that week.

It is quite obvious that some of the project children were able to produce all of the program sounds correctly prior to the start of training, but one of the major purposes of this program was to make all the children more aware of correct articulation and generally acceptable speech habits. Those children who were not able to produce a sound correctly were given special help, either through the school therapist, the speech improvement specialist, or simply through the stimulation of the speech improvement program.

The behavioral management constitutes another important component in the intervention package. It has been developed in two phases. The first phase began with the introduction of the techniques of behavior modification to all project staff at a workshop. At this time, each teacher was instructed to choose one behavior of one child in her classroom that she

considered to be worthy of change and then a brief program of change was worked out for her involving the techniques of behavior modification. This phase of the behavioral management program met with varied success. In one case where the teacher had picked out the disruptive behavior of a very aggressive, acting out child, rather great success was achieved. It was decided that the behavior modification program for this one child was to take place every school day from 9:00 till 10:45. During this time, the teacher agreed to ignore all disruptive behaviors of this child except for the most extreme behavior when the child would be simply removed from the class and taken to the principal's office. Positive reinforcement in the form of candy and social approval and in some cases small trinkets were given for approximations of the target behavior which was sitting in the chair behavior, working on some task. The contingency initially established was to reward the sitting, working behavior every 30 seconds. Gradually, the expectations became more and more stringent and it was possible at the end of this three week program to demand up to twenty minutes of continuous work from this child. During this entire time a graduate student was present in the classroom to collect data and to assist the teacher in arranging the contingencies.

Some of the other intervention teachers found it more difficult to follow the programs designed for them and as a result reported far less success. The usual arguments and complaints were received about their programs such as, they felt uncomfortable rewarding a child for doing something that he should already be doing, and that they simply did not have the time to spend with one child that the program demanded. The project staff is continuing to work with each of the teachers on an individualized basis in helping her to mount some type of behavior modification program using the principles of positive reinforcement.

One of the six intervention classrooms has been involved in a second phase of the behavior management program. It was in this school, a city school, where it was felt that the over-all structure of the classroom was chaotic enough so that perhaps a behavior management program should be utilized on a class wide basis. The teacher of this classroom was particularly interested in having assistance in structuring her classroom and motivating the children to do academic type tasks. Homme (1969) has provided the model from which our program was developed.

A base line was established over a number of days of the frequency of disruptive behaviors engaged in by each child in

the classroom, amount of time spent in appropriate behavior by each child, and the teacher and aide reaction to each type of child behavior. Each of two observers in the classroom observed simultaneously two children for five minute segments two or three times each morning, (a total time of 10 to 15 minutes observing each child). Reliability of observation was obtained by having two observers record the behaviors of the same child for one of the series of five minute segments. The behavior rating scales that were utilized in the establishment of base rate data are contained in Table 5. In general, the program involved the establishment of a set of contracts for each child involving his work for the entire day. The contracts for each student were actually written out on three by five index cards and were geared carefully by the teacher to be consistent with the individuals level of performance. Thus, it was possible for one student to fulfill a contract that involved his entire mathematics lesson for the day, whereas another child had his mathematics lesson divided up into a number of separate contracts each dependent upon the known performance levels of the individual children. After a contract had been fulfilled, the child went to the teacher and had the contract validated and then chose an item from a reinforcement menu for his reward. At the end of the day,

Table 5Description of Behavior Rating Scales

Disruptive behavior is that which substantially interferes with the completion of an assigned task.

The following types of disruptive behavior are recorded by placing a check mark in the appropriate space for each occurrence observed.

1. Motor

There are a number of disruptive movements which may be performed by the child while he is seated at his desk. These are as follows:

Kicking legs - this is considered disruptive only when the child's foot or leg strikes another object, such as his desk or chair. (Many children will kick or swing their legs idly while still engaged in an appropriate task.)

Rocking chair - this refers to any occasion when the child causes the legs of his chair to leave the floor. (However, ordinary adjustments of the chair made by the child to sit more comfortably are not considered disruptive. This also applies to movements of the chair which may be necessary before the child can leave his seat.)

Turning around - this is any instance where the child turns his head to look at something behind him which is not related to his present task. (This does not apply when a child simply looks up or to the side or when the child looks back at another child who is answering a question.)

Waving arms - any fairly continuous movement from the shoulders or elbows which could not reasonably be performed while still attending to the task at hand. (This does not include movements from the wrist.)

Table 5 (continued)

Movements primarily performed while away from the desk are as follows:

Leaving the chair - any instance in which the seat of the child's pants is no longer in contact with the seat of the chair, including those times when a child tucks his leg underneath him and sits on it, rather than sitting directly on the chair, as well as walking away from the chair.

Failure to return to the chair and sit down - when a child has left his desk for a legitimate reason, but delays his return by standing or walking around, he is displaying disruptive behavior. When a child has left his seat without permission (and receives a check), then returns to the area of his desk but fails to sit down, he is displaying a separate inappropriate behavior.

## 2. Verbal

Task-related - When the teacher has specified (or begins a familiar task where it has been previously specified) that the children must raise their hands and be called on before speaking) any verbal behavior that does not meet these prerequisites is considered disruptive. This includes task-related comments as well - if the child says, "I know the answer" or "This is fun" without being called on, his behavior is not appropriate. (However, when the teacher has specified that anyone who knows the answer may speak out, then any reasonable answer constitutes task-related verbal behavior. Incorrect answers are not necessarily disruptive.)

Non-task-related - talking to oneself or others,

## 3. Aggressive

This refers to any intentional physical contact with another child which results in harm or annoyance to that child. Examples are hitting, kicking, jabbing, tickling, etc.

Table 5 (continued)4. Disturbing property

This refers to instances where a child intentionally manipulates objects that do not belong to him, such as school property or another child's property. The manipulation may result in the mere movement of articles or pieces of furniture, or it may result in throwing or breaking them. (This does not apply to instances where the child makes appropriate use of materials that have been assigned to him, or materials that the teacher has specified to be accessible to the class as a whole, such as books on the bookshelf, crayons, etc.).

5. Noisemaking

Generally, any sound louder than that produced by a light tapping of the fingers is considered disruptive.

Vocal - this refers to all non-verbal sounds created with the vocal cords, such as humming, or imitations of animal sounds. (It does not include isolated speech sounds, such as pronunciations of individual letters or parts of words. When these occur, they constitute verbal behavior (Category #2 above) and must be judged according to the standards for that category.

Non-vocal - this refers to sounds produced by other parts of the body such as hands and feet, or by manipulation of objects such as chairs and books. In this case it is important to consider both the intensity and the purpose of the sound. For example, the squeaking of a chair is a relatively loud noise, but if it occurs because the child was leaving his chair, then it is not considered disruptive. On the other hand, the tapping of a pencil on a desk is not nearly so loud, but as it serves no task related purpose, it is considered inappropriate and potentially disruptive.

Table 5 (continued)

## Teacher and Aide Responses

The responses of the teacher and aide to a child's disruptive behaviors are also recorded. The first initial of the person responding is used with a number code for responses.

1 = looking at the child; 2 = speaking to the child; 3 = going over to the child; and, 4 = physical contact.

## Appropriate Behavior

The amount of time the child is engaged in appropriate behavior is also recorded by means of a stop watch. Appropriate behavior is defined as task-oriented behavior and as behavior other than that defined as disruptive behavior.

Teacher and aide responses to appropriate behavior are recorded in the same manner as responses to disruptive behavior.

the child turned in to the teacher the total number of contracts that he had fulfilled and he was then able to select from a second reinforcement menu an activity that he found particularly attractive. An attempt has been made to assure that each child was able to collect and fulfill approximately the same number of contracts every day. If the child has not fulfilled a sufficient number of contracts each day, the error lies within the construction of the program, and not simply within the child. The immediate reinforcement menu and the end of the day reinforcement menu were established by interviewing each child and trying to ascertain what kinds of material and activities he most enjoyed. A section of the classroom has been set aside as a reinforcement area and it is in these areas that the children engaged in pleasurable activities with a minimum of disruption for the rest of the class.

The observers for the behavior management program have continued to record the number of disruptive behaviors, the amount of time engaged in appropriate tasks and the teacher and aide reactions throughout the entire program and some preliminary data is available for an evaluation of the program's effectiveness. The mean number of disruptive behaviors per child per minute of observation has decreased from a mean of

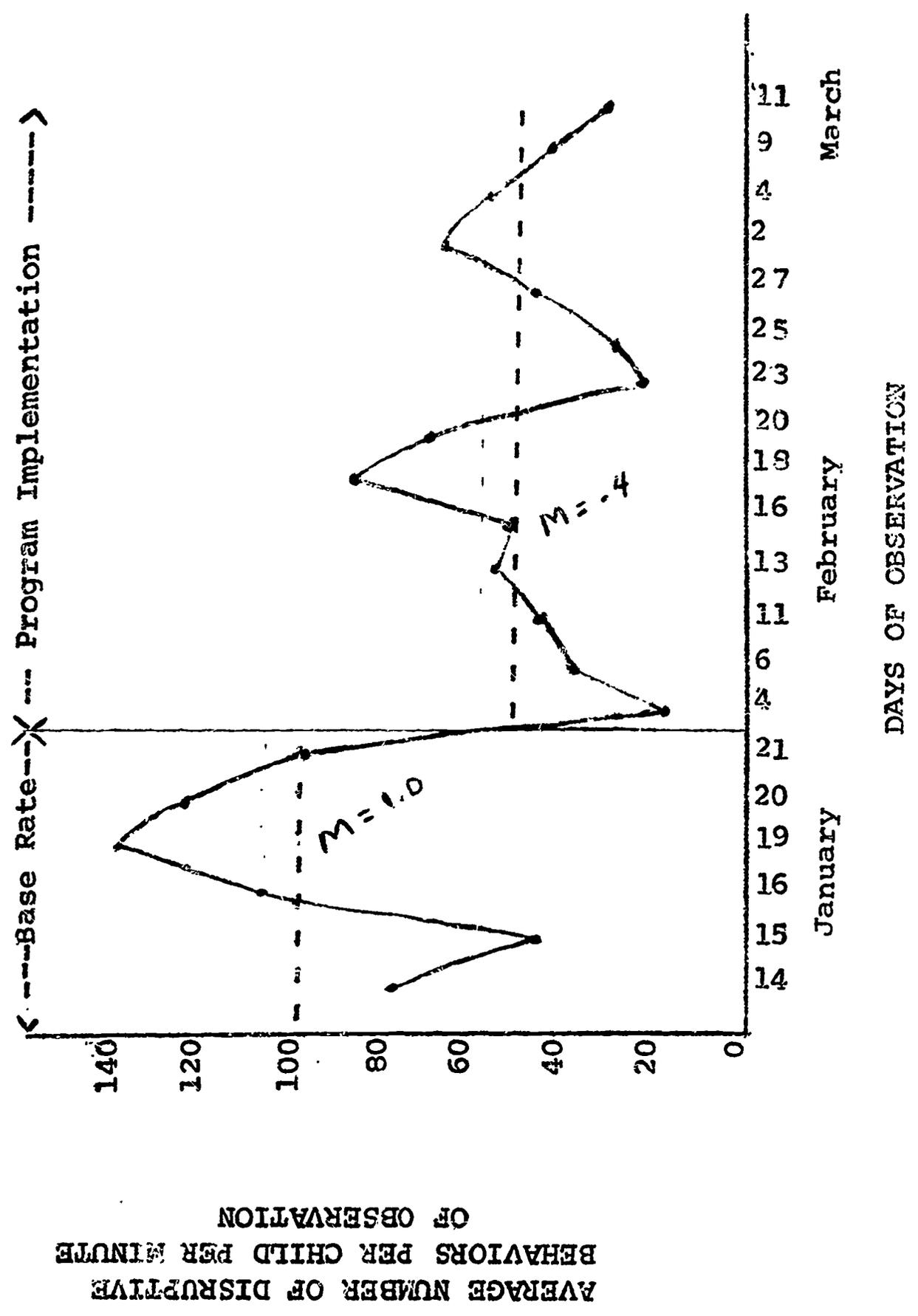
1.0 during the base rate period to a mean of .4 during the period of time when the program has been in effect. This means that the over-all number of disruptive behaviors has been more than halved. (See Figure 3).

One of the most exciting aspects of this total behavior management program has been the enthusiastic participation of the teacher. This enthusiasm has led to some solid suggestions for improving the program. For instance, she felt that it was quite important for the continued interest of her children in the program that they be allowed to gradually take over the management of the contracting. Thus, a child should be involved in the decision of what he should be doing during the day, for how long, and for what reinforcement. This teacher has also been quite creative in bringing behavior other than academic performance under the control of the contingency contracting. For instance, at the end of each day she writes a contract for each child that states he will be in school at 8:30 the next morning. This has been a highly effective way of having children at school on time.

Another suggestion that this teacher has made is to keep the writing of contracts quite flexible. Some of the contracts can be written out before the day begins and would incorporate the expectations of the teacher for her children. However, some

FIGURE III

DISRUPTIVE BEHAVIORS IN THE CLASSROOM (N = 10)



of these contracts must be modified during the day because it is impossible to predict exactly what is going to happen during the day that influence a child's ability to perform various tasks. With this increased flexibility, it is possible to ensure that each child will be able to fulfill a certain number of contracts each day.

The visual-motor perception development training program, the final component of the intervention program to be discussed, has been divided into two general areas, gross motor training and visual perceptual training. The gross motor training program utilized in the present intervention project, developed by Mr. Basil Gaar and Mr. Frank Belgau (Belgau, 1967, has two major purposes. First, it can be used as an important motivational assist to the overall instructional program. The tasks are constructed so that every child not only can succeed, but can actually sense his improvement as it occurs through practice. The second purpose is to provide children, through the presentation of a carefully programmed sequence of motor activities, experiences that help a child acquire more efficiency in movement, develop greater self-awareness, improve posture, and in general make a child more responsive to his surroundings. These motor experiences may contribute significantly to the formation of a base for other learning.

The second phase of the visual-motor perceptual development training program is based upon the Frostig (1964) program. The Frostig program is an academic free visual perceptual training program which is readily accepted by young elementary school pupils. Its activities essentially build upon the gross motor program. It is felt that the training results from the gross motor training program need to be channeled toward a level where they are directly applicable to basic visual functioning needs for achievement. It is here that the Frostig program has its greatest relevance as it brings into focus the five major areas of visual functioning which are related to learning through symbolic language. They are: visual-motor, figure-ground perception, perceptual constancy, spatial relations, and position in space. These areas of visual functioning are directly related to the basic requirements for the development of reading and math skills.

Both of these programs are ongoing in each of the six intervention classrooms. However, the exact nature of the programs differ depending upon various factors such as the needs of the children in each of the classrooms, and the competencies and the interests of the teachers and teacher aides in each of the classroom.

There are five major aspects to the evaluation component of the intervention project. The first aspect has to do with the collection of the group administered achievement and intelligence test data. The Hillsborough County School System administers the Metropolitan Achievement Test, (Hildreth, 1959), and the California Test of Mental Maturities, (Sullivan, et al., 1962) each fall to all grade levels. It was decided to go ahead and collect this type of data from the project children even though the problems involved in group testing of seven-year-olds throws into question the validity of the scores. In all of the project classrooms an attempt was made to alert the teachers to the problems of group administrations of tests and as a result the testing situations were constructed to maximize testing rapport. All group testing was completed by mid-October. The group data from these two tests were scored and analyzed by the county Data Processing Center and then returned to the Project Director.

The second aspect of the evaluation component consisted of individually administering a battery of psychological tests to each of the 120 project children. The tests administered included: The Slosson Intelligence Test (SIT) for Children and Adults, (Slosson 1963); the Jastak Wide Range Achievement Test (Jastak & Jastak, 1965); the Templin-Darley Screening Test of Articulation (Templin & Darley, 1960); the Harris revision and extension of the Goodenough Draw-A-Man Test (Harris, 1963); the Koppitz Bender

Gestalt Test for Young Children (Koppitz, 1964); and the Piers-Harris Self-Concept Scale, "The Way I Feel About Myself" (Piers, 1964). This test battery was administered in two parts at separate sittings by two different examiners. In this way it was possible to reduce test score variability due to fatigue of the children, while at the same time counter balance any effect that might exist in over-all competence among the examiners, although all examiners met two criteria of competence: first, each had had experience testing young children; and second, each had had some experience in working with the type of test they were administering to the project children. These test data served two functions. First, they served as a pre-intervention assessment of performance level of the project children and could be compared with the post-intervention assessment of performance level to determine the efficacy of the project. Second, these data served as diagnostic information for the teachers enabling them to be more aware of the fine-grain differences in the patterns of strengths and weaknesses displayed by their project children, which in turn has led to more individualized remediation.

The third aspect of the evaluation component consisted of the administration of certain tests to determine the effectiveness of specific components of the instructional program. Tests used for this purpose were administered only to the 60 children

in the six intervention classrooms. These tests included: the Frostig Development Test of Visual Perception (Frostig, 1964); the Belgau Test of Gross Motor Development (Belgau, 1967); and a Rating Scale of Disruptive Behaviors in the Classroom (developed by Project personnel and described in an earlier section).

The fourth aspect of the evaluation component of the project involved asking teachers to fill out a daily lesson plan outlining all the activities that actually went on during the day. This information may make it possible to relate changes in children's test performance to specific classroom activities.

Finally, the fifth evaluation aspect involved the administration of a questionnaire to each of the project families that provided information about the general characteristics of the home environment of the project children. This activity is described in a later section.

#### Followup

The Metropolitan Achievement Test and the various measures of the components of SQ will be administered at the start of the intervention program and again at the end of the program (spring of 1970). These scores will, of course, be one method of indicating to what extent the program was a success. However, there are other indices that are needed. For instance, it is not enough to know that the various intervention groups score higher

on our tests than do the non-intervention groups. We also want to know that the children in these intervention groups continue to be more successful in their classroom placements in the years to come. Therefore, it is deemed essential that a brief followup study be carried out in the spring of 1971. This would consist of the administration of our basic measurement instruments to the original sample of 120 learning problem children. In this way we would at least have information as to their success for one year following their exposure to our intervention program.

#### Project Timetable

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| 1. Selection of participating schools and identification of subject population   | 5/69-6/69 |
| 2. Hiring of project staff; intervention program specification; parent permissions obtained  | summer/69 |
| 3. Initial diagnostic testing; beginning of intervention program   | fall/69   |
| 4. Intervention program  | winter/70 |
| 5. Finishing up intervention program; assessment of children's progress; work with school personnel on placement of project children for next year | spring/70 |
| 6. Followup study of children's progress   | spring/71 |

REFERENCES

- Ames, Marilyn, & MacDonald, Jane. Easy Skits for Youngsters. Minneapolis: T.S. Denison & Co., 1964.
- Bannatyne, A. Diagnosing learning disabilities and writing remedial prescriptions. Journal of Learning Disabilities. 1968, 1, 28-35.
- Bateman, Barbara. Three approaches to diagnosis and educational planning for children with learning disabilities. Academic Therapy Quarterly, 1966/67, 2, 215-222.
- Belgau, F.A. A Motor Perceptual Developmental Handbook of Activities. La Porte, Texas: Perception Development Research Associates, 1967.
- Bereiter, C. & Engelmann, S. Teaching disadvantaged children in the preschool. Englewood Cliffs, New Jersey: Prentice-Hall, 1966.
- Byrne, Margaret C. The Child Speaks, New York: Harper & Row, 1965.
- Edgington, Ruth. Public school programming for children with learning disabilities. Academic Therapy Quarterly, 1966/67, 2, 166-169.
- Fassler, Joan. All Alone with Daddy; The Man of the House; & One Little Girl. New York: Behavioral Publications, 1969.
- Frostig, Marianne, Lefever, D.W., & Whittiesey, J.R.B. The Marianne Frostig Developmental Test of Visual Perception. Palo Alto, California: Consulting Psychologists Press, 1964.
- Frostig, Marianne. Testing as a basis for educational therapy. Journal of Special Education, 1967, 2, 15-34 (a).
- Frostig, Marianne. Developmental evaluation and the institution of remedial programs for children with learning difficulties. Academic Therapy Quarterly, 1966/67, 2, 76-88 (b).
- Haring, N. G. & Ridgway, W. Early identification of children with learning disabilities. Exceptional Children. 1967, 33, 387-395.

- Hewett, F. M. Educational engineering with emotionally disturbed children. Exceptional Children. 1967, 33, 459-467.
- Hildreth, Gertrude H. & Others. Metropolitan Achievement Tests, Primary I. Battery. New York: Harcourt, Brace & World, 1959.
- Harris, D. B. Children's Drawings as Measures of Intellectual Maturity. New York: Harcourt, Brace, & World, 1963.
- Homme, L., Contingency Contracting in the Classroom.
- Instructo Teaching Guide. Puppet Playmates. Paoli, Pennsylvania: Instructo Corp., 1967.
- Jastak, J. F., & Jastak, S.R. The Wide Range Achievement Test. Wilmington, Delaware: Guidance Associates, 1965.
- Kirk, S. A. & Bateman, Barbara. Diagnosis and remediation of learning disabilities. Exceptional Children. 1962, 29, 73-78.
- Koppitz, Elizabeth. The Bender Gestalt Test for Young Children. New York; Grune & Stratton, 1964.
- Lindquist, E.F. Design and analysis of experiments in psychology and education. Boston: Houghton Mifflin, 1953.
- McGahan, F. E. Early detection and programming for children with school adjustment problems. Symposium presented at the meeting of the National Council for Exceptional Children, Columbus, Ohio, April, 1962.
- Piers, Elten V. Age and other correlates of self concept in children. Journal of Educational Psychology, 1964, 55, 91-95.
- Preventive Psychiatry Research Program, Institute of Child Behavior and Development. State University of Iowa. Why People Act As They Do, booklets I through IV. Cleveland: Educational Research Council of Amorea, 1967.
- Slosson, R. L. Slosson Intelligence Test for Children and Adults. East Avora, New York: Slosson Educational Publications, 1963.

Steele, Nancy W. Language development in the culturally disadvantaged. Mimeographed report, 1967.

Sullivan, E. T., Clark, W. W. & Tiegs, E. W. California Short-form Test of Mental Maturity, S-form/Level I.

Templin, Mildred C., & Darley, F. L. The Templin-Darley Tests of Articulation. Iowa City: Bureau of Educational Research and Service, 1960.