The Demonstration and Research Center for Early Education (DARCEE) seeks to improve the educability of young deprived children through a tight interaction of research, training, and demonstration. One aspect of research involves intervention with families, including mother training, curriculum for the child, and home visits. Partial results indicate that the program is effective, with acceleration of development depending on the depth of intervention for each child. The teacher shortage in the subprofessional area is being solved by a program to train the trainers of aides. Focusing on the subprofessionals, but maintaining staff contiguity, an Ellis River project progresses in three phases: training of team leaders, training of team members, and in-service practice. Natural setting observations are made in the home and in the classroom to determine influences of a low income background. These influences sometime fail because of lack of direction, organization, and consistency. (MH)
RESEARCH, CHANGE, AND SOCIAL RESPONSIBILITY:
AN ILLUSTRATIVE MODEL FROM EARLY EDUCATION

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DARCEE Papers and Reports
Volume 2, Number 3, 1967
Research, Change, and Social Responsibility: An Illustrative Model from Early Education

Idea Session: American Psychological Association
Division 16

Chairman: Walter L. Hodges
Indiana University

Participants: Susan W. Gray: The model and its general setting
James O. Miller: Intervention research with young disadvantaged children and their parents
Richard H. Hinze: Research on teacher effectiveness and the efficacy of teacher training techniques
Maxine Schoggen: Basic and comparative studies of the imprint of the low-income home on young children

Please note: All mentions of the "handout" refer to material now in the appendix.

Demonstration and Research Center for Early Education
George Peabody College for Teachers
Nashville, Tennessee

September 1, 1967
Research, Change, and Social Responsibility: A Model From Early Education Overview

Susan W. Gray

This morning we would like to present a conceptual scheme our group is trying to implement at Peabody and to obtain your reactions to this idea and to the way we are attempting to put it into practice.

Dr. Miller, Dr. Hinze, Mrs. Schoggen and I all work within a setting known at Peabody as the Demonstration and Research Center for Early Education. This research, training, and demonstration center is funded by the Office of Education and the Office of Economic Opportunity with the primary mission of improving the educability of young deprived children from the southeastern region of the United States. As we have examined the mission for which we are funded, our own background and concerns, and our projections for the future, we believe that we are in a position where we have major responsibility—and also a great opportunity—to see that research findings are used, and used appropriately, to change educational practice, where such changes may be advantageous.

Science traditionally (or at least in the 19th and early 20th century) was viewed as the independent and detached pursuit of knowledge. Like Leigh Mallory in scaling Mount Everest, the scientist was expected to embark on his climb toward knowledge "because it was there." But science lost its last pretense to detachment, or innocence, if you will, around 1945. No longer can scientists of any ilk be impartial toward the consequences of their discoveries.

In this loss of innocence, the behavioral sciences occupy a particularly vulnerable position. Although we as psychologists may feel correctly that our discoveries for good and ill are modest indeed compared to those of nucelar physicists, these findings are nevertheless powerful tools, and ones that relate directly to human welfare. We cannot ignore our social responsibility; some behavioral scientists at least must concern themselves actively with their social and ethical responsibility in terms of research and its utilization to create changes in human behavior. Those of us who read Science or, in our own field, the American Psychologist, or the APA Washington Report are well aware that with the public, with federal agencies, and with Congress the climate is most unfavorable for a denial of this responsibility.

This responsibility takes several forms. One obviously is in the choice of problems. In psychology for example, there are many problems of long range theoretical importance as well as of practical significance which are shunned because of the difficulty of conducting research in a particular area, the length of time involved, and the somewhat inelegant approaches that must be used.
Another responsibility is that of assuming part of the load of getting research into practice, where appropriate. The last three decades have shown us the dangers of turning powerful tools loose to be picked up by the unscrupulous. Less obvious but probably more important is the lag between research and practice, perennially decried at every meeting of psychologists or of educators. Each blames the lag on the other, and each has something on its side. But there are ways of sharing this responsibility, and our presentation will describe some of them.

Another less obvious need, but one of importance in applied research, is the need for reciprocal interaction which will make it possible to sharpen such applied research and make it more congruent with what is needed in the field. Some vehicle is needed for shortening the lag between relevant research and its field application, and also the lag between field testing and the re-tooling and re-directing of research.

An area of particular concern today in national affairs is that of the potential and educability of children from deprived circumstances. It is also an area of major importance in the behavioral sciences. The role of early experience in cognitive and effective development, and the influence of social class and parental behavior upon intellectual and social competence are of such long range importance we cannot afford to look only at the immediate need for more people and more materials to work with young deprived children. Yet the problem has urgency and great popular appeal--no Congressman can afford to be against hungry little children. Thus, it is easy to approach this need only from standpoint of crash programs, all-out efforts to do something, almost anything, immediately for the problem. No one would deny that hungry children should be fed--now. But there is also need for long range research, and for self-correcting devices in planning intervention programs, and training patterns for persons to work in such intervention programs. Else we shall always be attempting to mop up for yesterday instead of developing some basis for shaping the future.

It is within this troublesome area that we have chosen to work, not because it is quick and easy, nor clean and elegant, for it is none of these, but because we believe we have an opportunity for testing a particular vehicle for meeting one of the major social responsibilities of the behavioral scientist when he is working in an area sensitive for human welfare—that of exercising some direction over the manner in which research is translated into action, and in which action suggests new shaping for future research.

We shall present one model which we think holds some promise for psychologists and educators working together to meet their social responsibility in relation to research and change in human behavior. We offer it not as a panacea but simply as an illustration of one possible approach. It is not for everyone, but at present it is the one for us.
The Demonstration and Research Center for Early Education (which goes by the what we hope is the not-too-repellent acronym of DARCEE) has a threefold mission of research, training, and demonstration-and-dissemination, relevant to improving the educability of children from low income homes. Our particular emphasis in training is upon the southeast because of the major need of the region but our research and dissemination efforts have, we trust, a broader applicability.

The layout sheet on page one of the handout represents an attempt to sum up the present activities of DARCEE. As you can see by perusing it, we are engaged in a number of activities, some which represent our commitment to certain urgencies for training Head Start personnel in the southern region, and of disseminating information about our current program and findings, many of which represent longer range efforts both in research and in training. Around the three points of the triangle represented by research, training, and demonstration-dissemination we have drawn three arcs, each of which has an arrowhead at either point. This is our effort to suggest that the circle comprised of the three arcs moves in a clockwise and also in a counterclockwise direction. Thus, we conduct intervention research designed to test ways of improving the educability of young children through working directly with them and also with their mothers; the centers in which we conduct this research also serve as training facilities for persons with a career interest in the field; they also have heavy use as demonstration centers. But the circle moves as well in the other direction. We are concerned with the thorny problem of teacher effectiveness and with developing patterns of training and of refining these patterns after field try-outs. Thus future intervention programs will be shaped in part by the problems and successes, the hunches and the insights of our former trainees. And through it all runs the thread of continued concern with the more basic research which may help to provide long range answers to questions concerning the shaping of early experience and its effect upon the cognitive and motivational development of the young child.

The central part of our entire endeavor is what we do in our intervention programs with young children and their families. And so James Miller will next describe our current major intervention research as it relates to this general idea we are trying to develop here. After that, Richard Hinze will discuss certain aspects of our training endeavors with particular emphasis on a current study which we believe illustrates our model rather fully in showing the close relationship between training and research in this particular study. Then Maxine Schoggen will present an on-going study which represents our more basic research and will relate it to our intervention programs and to our training endeavors. And finally, I shall try, on the basis of these three presentations, to present a brief view of what appear to be the particular strong and weak points of this type of circular approach, insofar as we see them at this time.
Introduction

Based upon findings of well controlled laboratory research, the intervention research is an applied package undergoing testing in a quasi-field situation. Our intervention research efforts serve as a focal point at DARCEE. Students in training help to implement the program as part of their career development. Working in the context of the intervention research they become sensitized to program development based on fundamental research in child development and the research literature pertaining to learning and personality characteristics of young children. The on-going demonstration of classroom techniques and materials serve to disseminate the product of our research. The intervention research also feeds into the system by identifying problems which further research can help to clarify. Most importantly, however, are the progranmatic aspects of our research efforts which find their applied culmination in an intervention study.

In our present endeavors with young disadvantaged children and their parents, we are attempting a systematic assessment of the agents of change which enhance vertical diffusion of cognitive stimulation within a family. This research stems from earlier work in the Early Training Project (Klaus and Gray, 1965) where two groups of preschool children were provided two or three ten-week summer sessions and regular between-session home contacts to maintain progress. The program objectives were to provide organized experiences to enhance the child's chances of coping effectively with formal schooling. Subsequent to the experimental program, it was found that the younger siblings of the experimental groups when compared with the younger siblings of the control or comparison groups showed a significant 14 point Binet IQ differential in favor of the experimental children. Our post-hoc hypothesis was that the inter-session contact the project home visiting teacher had with the mothers of the experimental children, designed to maintain the effects of the summer intervention itself, provided the skills for the mother to be a more effective agent in structuring and implementing activities for all of the younger children in the family and could account for the vertical diffusion of treatment effect which created the 14 point differential.

If this hypothesis was correct, a systematic study to document the process by which vertical diffusion could be maximized, and a study of the intra-family processes of change were in order. In view of the mushrooming of programs for young disadvantaged children, it became extremely important from a social standpoint to specify the way in which vertical diffusion could be systematically interjected in programs for children from deprived circumstances. Intervention with mothers as
well as children might have a much longer range impact. Thus our intervention study is directed to a problem of immediate social utility and rests upon our belief that research should follow up on promising leads uncovered during its conduct.

Rationale and Study Design

This research has focused upon comparisons of several methods and procedures of intervening with families from disadvantaged environments to stimulate the cognitive development and competency of their young children. The mothers have been the focal point in the family constellation for this intervention. Two major assumptions form the foundation or rationale of the study: (1) the mother is the chief source of stimulation in the early years for the children in the family and is the agent who imposes the necessary order and structure upon the environment for the child's development of competence and control; (2) the mother plays a key role in sustaining developed skills and motivating the child to develop more complex abilities during the early years.

Therefore, we have been concerned with enhancing the mother's ability to cope with these responsibilities, to compare several training approaches, and to study the process of development in both the mother and the children in the family. The specified formal areas of concern are language maturity, intellectual functioning, concept formation, cognitive style, and variables, such as achievement press in the home environment conducive to development. We are concerned with such informal and unobtrusive indices of improved adequacy as the mother's ability to organize and to implement appropriate objectives, the up-grading of her own level of aspiration as reflected in improved occupational status, and her use of classroom-learned methods and procedures in instructing her children at home.

The general design of the study includes four groups each receiving a different treatment. The first group is designated the Maximum Impact Group where both the mother and a target child of the family are brought to the center for a training program. The mother comes to the center once a week; the child five days a week. The mother's training program is a sequential process of skill development and movement from directed observation to actual classroom participation in a teaching role. In addition a home visiting teacher calls at home to stimulate use of the mother's newly learned skills in the training program. The children's program is a comprehensive developmental curriculum to foster socialization for competence. It centers about the development of aptitudes or skills for environmental mastery and the development of sustaining attitudes necessary for continued growth.

In the second group the target child of the family is the only member enrolled in a program. This group is called the Curriculum Group. Here the child is provided a classroom program which is a replication of that received by the Maximum Impact target child.
The third group is designated the Home Visitor Group. Here the family has no direct contact with the Early Training Center, but is visited in the home once a week by a home teacher who works directly with the mother and uses the child to demonstrate the techniques and procedures consistent with the classroom programs.

The fourth group is a natural environmental group carefully chosen to match the demographic and structural characteristics of the treatment families but receives no planned intervention other than periodic criterion testing. This group is a year older than our classroom groups to insure comparative benchmarks void of the contaminating influence of an intervention project within the housing area.

The handout indicates the parallel instrumentation for mother and child used in our semi-annual criterion testing.

Treatments—Socialization for Competence

The curriculum developed in the Early Training Project (Gray, et al., 1966) served as a point of departure for our present classroom intervention work. Organized about two major classes of variables, aptitudes for achievement and attitudes toward achievement, we are specifying the perceptual templates of finer and finer discrimination used to decode stimulus information in each of the major sense modalities. The development of cognitive schema to assimilate and encode appropriate responses is encouraged through a variety of experiences and a programmed reinforcement schedule. Careful introduction and ordering of new material in steps of just manageable difficulty aids in moving motivations from an extrinsic to an intrinsic locus while insured success develops task orientation in school related activities. Since the curriculum is directed toward the development of skill in placing order upon one's environment, content, as such, takes a secondary role. A unit approach has been adopted which moves from the child himself (the first unit is entitled "All About Myself") through the family, school, local community to urban and farm life. Thus, it is within the context of ever broadening content areas that the skill development program increases in scope and the child develops ever more finely tuned capabilities.

Equally important to the development of coping skills are the attitudes necessary for sustaining developed skills and continued growth. Positive attitudes relating to school type activities, ability to delay reward, persistence, achievement motivation, etc., are a few of the major sustaining attitudes. We firmly believe that one's motivations are learned just as any other skill. By carefully programming activities and tasks to develop these motivations, the child gains greater control over himself and his environment. Our work in this area has centered about specifying tasks of increasing difficulty level which promote movement from an extrinsic to intrinsic locus.
Our goal has been to develop a curriculum based upon substantive research and theory with clearly defined goals and objectives. In this way, we believe, we can delineate the step-by-step procedures for obtaining our objectives and these can be communicated for application in other contexts and with other populations. We have carefully avoided the gimmicky programs and techniques which seem to be offered in increasing numbers as a panacea for all of the ills of mankind.

In our classrooms, a lead teacher and four demonstration assistants work with a group of twenty children in an alternating large-small group pattern designed to increase the amount of individual contact with an achieving role model for the children. The small group teachers are primarily at a sub-professional level, or career trainees obtaining their practicum experience. We have had unusual good fortune in the selection of our sub-professionals which has kindled an interest in examining the parameters of teacher effectiveness. Here, the intervention study has generated a researchable problem into the program for further investigation. We believe the problem is a two-fold one in which there is a predictive phase and a training phase. Hence, our ecological study of teacher behavior and our study of training techniques for sub-professionals, both of which will be discussed in the following papers.

Partial Interim Results

As illustrative of interim results in one of the several criterion areas, after seven months of intervention the classroom groups showed a significant gain in intellectual ability. The handout (page 5) indicates these gains to be increasing over time. This gain for the classroom groups now has lost the help of the regression phenomenon, in fact, is battling it. The Home Visitor target children showed an average gain of 6 points over the same period. These findings are in keeping with the amount of contact the children had with a trained teaching adult. Over the same period of time, the mothers showed an average increase of 5 WAIS full scale IQ points. Note that the performance section of the test carries the greatest measure of gain, perhaps indicating a greater ability to place perceptual order on the environment. These results as well as similar findings on other measures indicate the change that can be effected over a short period of intervention if the program's objectives are clearly specified and the operations and procedures are clearly delineated and implemented. Detailed analyses of the other formal measures will soon be available. Presently we are testing the younger siblings in the family to measure the extent of the impact upon the total family in keeping with our research objectives. These will be crucial tests of our procedures as will be the eventual progress of our target children as they go into the regular graded school program.

Some observational material, sometimes referred to as unobtrusive measures, should be taken into account in the evaluation process. To date, seven of the mothers have taken steps to up-grade their educational background through enrollment to
finish high school diplomas or entrance into trade schools for up-grading occupational standing. In other words, 35 percent of our direct classroom contact mothers are involved in continuing education. This summer two of the mothers were employed as classroom aides in the summer Head Start program. We have lost three of our families from the housing project because they have bought their own homes rather than stay in public housing. In addition to these happenings where we have direct contact with the persons involved, our staff continually reports being asked into the homes of non-participating families to evaluate educational experiences being provided children of these families by the mothers, a "horizontal diffusion effect" if you will. While it is impossible to point with certainty at these events as being directly caused by our intervention program in the housing project, we would claim at least indirect influence and it leads us to have greater confidence in our objective data.

Discussion and Extension

The articulation of research, demonstration and training functions of DARCEE provide a continuous feedback among all of DARCEE's activities. We hope that such a continuous feedback organization will serve to provide the self-correcting element which will maximize productivity. This concept is so basic to the operation of the center, it seems wise to reiterate it at this point. People observing the classroom program in action or the work with our mothers groups are not merely seeing a program demonstration, but are seeing research in action. They are seeing people who are being trained in a research context and who at the same time are actually applying research treatments. Simultaneously, they are subjects in our research in developing better training methods, including better communication of classroom procedures and curriculum objectives through observation.
Research, Change, and Social Responsibility:  
Research on Teacher Effectiveness and the Efficacy  
of Teacher Training Techniques

Richard H. Hinze

One of the most profound revolutions in the field of early education today is  
occurring at the early childhood level. Not only does this include specialized cur-
riculum, but also staffing patterns and problems of training and certification.

A series of related events at the national level, from the Supreme Court  
rulings of the '50's, the civil rights movement, to Project Head Start have served to  
focus attention on the preschool years. Despite a downturn in the national birth rate  
and predictably fewer children entering first grade five years from now, an unprece-
edented demand for personnel trained to work with very young children is increasing  
geometrically throughout the country. While training teachers for classroom duty is  
acute, even more urgent is the need to train sub-professionals who have become an  
integral part of early childhood education programs. However, all the institutions of  
higher learning in the United States would be unable to accommodate the numbers of  
sub-professionals for training who are now on the job or soon to be so employed.

Before pursuing this point further, let me say just about two sentences to  
describe the total training program that we have at DARCEE.

Currently, we have about 22 students as fellows and assistants, ranging from  
undergraduate seniors in the professional semester of teacher training, through Master  
of Arts, Education Specialists, and Doctoral level students.

We are also operating a number of short-term programs; such as eight-week  
Head Start Teacher Training Programs, training conferences, and consultation services  
throughout the South. But all of these serve as constant reminders that tested pro-
grams are needed for training models, training programs are needed for trainers, and  
all of this needs to be done in an appropriate environment.

We believe the attack most appropriate for DARCEE upon this urgent and  
massive problem is through design, testing, and implementation of quality in-service  
training programs for sub-professionals. A corollary problem is the design of more  
efficient and effective professional training procedures for supervisory personnel to  
equip them to implement quality in-service training programs.

DARCEE has been in a unique position to address itself directly to the problem.  
In the Fall of 1966, a request was received to assist one of the Mississippi Child  
Development Program staffs in setting up an in-service training program for aides  
working in their child development centers.
Dr. Carol Rubow, who was at the time completing her doctoral work at Peabody, accepted the challenge, designed the in-service training program, and tested three ways to train teacher aides. Her 32 subjects were sub-professionals in the OEO funded child development center program in the severely impoverished delta region of northwestern Mississippi in and around Clarksdale. She found that the aides in the experimental groups grew not only in knowledge about young children, but made significant gains in their ability to apply positive reinforcement techniques as well. More appropriate for the moment, however, is that in her study she documented a sharp illustration of the obvious—that a proper in-service program aimed at any one segment of a staff should include the entire staff to whatever extent is necessary to maintain proper communications and staff relationships. She found a significantly high correlation at the .01 level between the classroom effectiveness of the teacher working with children and the classroom effectiveness of the aide working under that teacher. In the two instances where there was not significant correlation and where the teacher was weak, the aides assumed instructional leadership. The point was driven home when she observed that two of the aides in an experimental group took over completely with the children while the teacher wound up pushing a broom and performing other custodial duties. Dr. Rubow's study reminded us that we need to include total staffs in any future research we do in training aimed at a subgroup within a staff. This is exactly what we are doing in the study that is under way at present, and the one I would like to discuss with you for the remaining time that I have. We call it the "Training of Trainers of Aides Study."

As I have mentioned earlier, we in the South have come face-to-face with a critical shortage of personnel at all levels. Since we cannot attack all fronts at once, we have been concentrating on leadership people and those whose efforts might have the broadest impact. This is the basis for our present concentration on developing programs that will alleviate the demand for in-service training programs for sub-professionals. The need is for people who can train sub-professionals who are already in-service. Thus, after the earlier study by Dr. Rubow, we have turned our attention to the training of trainers of aides.

The questions that we are pursuing in this study are ones that we believe to be timely as well as within the scope of our operation. Some of the main ones are: What is an effective means for training people who will become trainers of aides? Is it feasible to take bright young people fresh out of college with little or no background in early childhood education and train them to be effective trainers of aides in one year of intensive study and practice? How can we use the concept of teams and teamwork effectively in such a program? Since most training of sub-professionals is going to be in-service, how can we interrelate in applicable ways didactic work and laboratory experience on campus with field experience where the sub-professionals and children are?

Of necessity, we have a varied setting for this project. Part of the study will take place on campus where the classes, seminars, and libraries are available. Also
on campus is the Early Training Center of DARCEE which carries most of the training load and the eight-week Head Start Teacher Training Institutes. The field experience centers are located in a ten-county area in south central Tennessee along the Alabama border. In this region, known as the Elk River Area, are six OEO funded child development centers operated as day care centers for impoverished children ages 3 to 5. Even though all six are part of one Community Action Agency, they are located in quite different socio-economic settings. The furtherest to the west is set in agriculture land with some cotton and a few factories in the small town of Lawrenceburg. Here the population of deprived children is predominantly Negro. At the eastern extreme of the area is Tracy City which rests at the southwestern tip of the Appalachian Mountains. This is an extremely impoverished area which is predominantly white and where there is little source of income. This area is oftentimes referred to as the "dog-hole mining area" because of the tiny little hand-operated coal mines that some people have in their backyards. Even from this brief description, it is easy to see that the study setting offers the investigators a wide variety of opportunities to work in different racial and cultural rural settings. I might mention here that the reason for conducting the study in a rural environment is that much of the need in the South, despite the trend toward urbanization, is still in the rural areas and we can predict that it will continue for some time to come.

The subjects of the study are the 45 members of the Elk River child development centers, 100 eight-week Head Start Teacher Training Institute participants, and the nine team members who are the people being trained to be trainers of aides. The Elk River staff people include teacher aides, teachers, center directors, supervisors, and the CDC program director. The eight-week Head Start Institute participants are on campus in groups of 25 for an intensive program of study, workshops, observation, and practice. Because of their presence and the need for guided observation and planning and evaluation of sessions with children, they lend themselves beautifully to the study as subjects for our “trainers in training” as well as providing a comparison group. The nine team members are the key figures in the study. Three of them are designated as team leaders and are second year graduate students who have had both work and training in programs for young children. The remaining six team members, two to be assigned to each leader, are bright young people fresh out of college with little or no training or experience in early childhood education programs. Of course, the DARCEE Research and Training staffs will be involved along with Dr. Carol Rubow who is coordinating the study. One doctoral assistant will work with Dr. Rubow in the research design and development, and with scheduling and administration of the measurement instruments.

The design of the study calls for three phases—training of team leaders, training of team members, and field practice carrying out an in-service program in the Elk River area. The first phase has been under way since June. The three team leaders have been undergoing a series of rigorous activities and study. They have been learning how to observe and report classroom procedures under the guidance of
Dr. Rubow and the staff. The sessions were so intense that all three of the team leader trainees asked for permission to go into the classroom and work directly with the children in order to obtain a better feeling for the program which they were observing. After several weeks of this training, the team leaders were then asked to guide the observations of the Head Start Institute participants. They were also trained to assist the Head Start people to plan and conduct their experiences with the children in the early training center. Following each session, the team leaders met with the Head Start people for an evaluation of their work which meant that they had to put into practice their observation training. One of the interesting ideas this group carried out this summer was to keep a diary of their concerns and impressions of their training as they went along. Then each week they met with Dr. Rubow and the doctoral assistant to review the reports. Several changes were made in the procedure as a result of their impressions and feelings—one example I have already cited was the need to get into the classroom and work directly with the children in order to get a better feeling for the DARCEE program. This procedure will be incorporated into the training program for the team members when they begin their training program September 11.

The second phase of the program is the training of the six team members which will be the joint responsibility of the team leaders, and the project staff. Generally, their training program will include activities similar to those of the team leaders except that they will go on all year long including the time the field experiences are taking place. So while we are calling the parts of the study "phases," this does not mean that one phase is ended before the other begins.

The third phase—field experience—will begin soon after the teams are organized in late September and go on until the end of May, 1968. The three teams, working with the DARCEE staff, and the leadership personnel of the Elk River project will actually plan and conduct the in-service training program for the entire staff of the Elk River centers. Of course, the focus is on the training of sub-professionals, but as we were reminded by the earlier Rubow study, the entire group needs to be included. The training teams will need to visit all six of the Elk River centers, become familiar with the programs, staff, children, and community setting. Presently, the plan calls for not less than one trip per week and often two, to the Elk River centers in order to accomplish the objectives of in-service training and evaluation of progress.

Pre- and post-measures will be in four general areas—aptitude, attitude, achievement, and work samples. Page 6 of the handout which you have received contains a brief tabular description of the various instruments, some of which are commercially designed and some of which have been developed by our own staff. One of the formidable problems we have encountered in this study is the literacy level of the sub-professionals. In the earlier Rubow study, her original random sample of 32 teacher aides out of 80 available contained seven who were unable to read at the
fifth grade level as measured by the Gates Reading Test. We had to assume that these subjects would be unable to benefit from her planned program. At Elk River, we were able to participate in pre-testing the candidates for the aide positions so that the employers might choose from candidates who were at least literate enough that we might predict some degree of success from our in-service training program. Hopefully, a year from now we will have some results from this study to report.

Summary Statement

I have just described to you a little about our formal training program, and two of the research studies we have done or are doing with the training of aides and the training of trainers of aides. These are only beginnings to the many problems in training personnel for early education that lie ahead. Research problems in training must take time for it is not until newly trained personnel have gone to work with their subjects, that the real tests can be made. We are endeavoring to ensure maximum results, though, by conducting our training programs and research in training programs in an experimental setting where both research and demonstration are a regular part of the workaday world and all staff members are alert to their responsibilities in such an arena.
Research, Change, and Social Responsibility:
Studies of the Imprint of the Low-Income Home on Young Children

Maxine Schoggen

The original Early Training Project (Gray and Klaus, 1965) raised a number of questions about reinforcement patterns in the home, such as: Do children in low income homes receive a smaller total amount of positive reinforcement than children from middle income homes? Do these same mothers reinforce for inhibitory behavior more often than do mothers in middle income homes? We were intrigued by such questions; they have led us to look more carefully at what actually does happen to children at home. At about the same time, after watching teachers in action in the DARCEE preschool, we became interested in trying to capture in concrete, descriptive terms, the ordinary behavior of teachers, day-to-day, in their own classrooms. From these two interests, two separate but related pieces of research are in progress in which the specimen record is the main method of gathering data. A specimen record is (Barker and Wright, 1954) a rich, detailed, sequential description of a child's behavior and environment during an observational period. Notes are taken by a skilled observer in the field using a portable tape recorder and a shielded microphone.

One of our major objectives from the beginning was that these records could form a stockpile of raw material which would have both immediate and long range usefulness, to ourselves and to others.

For the study of children at home, our sample includes 24 three-year-old children, eight from lower income urban, eight from middle income urban, and eight from lower income rural families. Some of these children have siblings in one of our demonstration or research preschools. With eight approximately 30-minute observations planned for each child, we shall have about four hours (350-400 pp) of descriptions of behavior for each of the 24 children.

Situation sampling is one of our thorniest problems. A number of recent reports suggest that the particular setting or the immediate context of behavior does much to determine the nature of the behavior. In contrast to taking a single sample of behavior from each of a large number of subjects, our approach is to sample repeatedly the behavior of a few subjects within comparable settings. We looked for settings which would be comparable across socio-economic groups. We reasoned that all families have to make provision for eating and that meals provide a high potential for social interaction. We, therefore, attempted to center our observations around eating situations, preferably an organized meal, when and if it occurs. As you might imagine all did not go smoothly. In one rural family we observed around noon time. The mother was busy folding clothes and making the bed. She turned to her three-year-old suddenly to ask, "'s at yours?" referring to a sandwich lying on a nearby table. The child responded by wordlessly picking it up and taking it outside. The mother no longer even noticed the child. The three-year-old walked purposefully a few feet from the house and vigorously threw the sandwich into the

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bushes. He then brushed his hands together with a look of satisfaction as if "mission accomplished." This is as close to mealtime as we have observed in our nine visits to this family to date. An observer has been present when the father returned from work and noted no activity indicating that a planned meal was forthcoming. Other research has suggested that lower income families organize fewer family activities than do middle income families. Indeed we see evidence that there is a clear lack of temporal organization in some of the homes we are studying. A more systematic method of getting information on the extent and kind of scheduling that goes on in all homes is planned to provide basic data on the amount of such scheduling and to provide information to guide our sampling procedure.

Using the specimen records of children at home, we are looking at ways in which the natural environment impinges upon the child through actions of social agents, particularly mothers, siblings, fathers and peers. To do this, we are analyzing the records in terms of Environmental Force Units. An Environmental Force Unit is defined (Schoggen, 1963) as any action on the part of an agent in the child's immediate environment which is directed to the child and which is recognized as such by the child. These units are identifiable in a reliable way and we maintain a continuous check on our level of reliability.

Once these units are identified they may be described in a variety of ways. One way in which we are especially interested is to ask, "What kinds of goals do agents have with respect to the child?" For example, in an earlier study (Schoggen, 1963) on children in upper-lower and middle income families, it was found that the single most frequent kind of goal which all agents had for the children was for the child to cease his demands upon the agent, for example, "Not now, "I'm busy!" The question we raised at the outset of this study about more frequent occurrence of reinforcement for inhibitory behavior by lower income mothers would now appear to be more complex than it seemed at first. It may not be that agents in lower income homes tell children to "Go 'way and leave me alone" more often than do agents in middle income homes. It may be that the differences lie in what else there is to "go away" to and against what other pressures from the environment these "go away" injunctions occur. It is to these kinds of questions that we plan to address ourselves in the immediate future.

We can look at some qualitative aspects of the behavior of mothers to their children. When, for example, in the excerpt in your handout (page 7), Owen whines at his mother for 50 seconds, she ignores him at first; after several seconds, she smiles at him; after several seconds more, she slaps him. Surely to grow up in an environment where behavior is as unpredictable as this must have some effect upon the cognitive development of the child. Our present analysis will measure the frequency of such environmental capriciousness.

Another area of unpredictability for some of these children is that same lack of temporal-spatial organization within the family which gives us sampling problems.
We find children eating only when they are insistent enough to demand food or to scrounge for themselves. We see children falling asleep in front of the ubiquitous TV. No sequence or patterning of activity is visible to us and we wonder if it is to the children. It is perhaps at this point that we might return to the circle with some hunches about ways of helping mothers to implement the temporal-spatial organization of home activities.

On quite another dimension, a somewhat peripheral one, but one which was an unexpected bonus, we find that in our specimen records we have a sample of the child's functional vocabulary which although it is not complete appears to be representative. This information can readily be incorporated into curriculum plans for our new training center in the rural area.

When the child starts to school, the teacher replaces the mother as a primary social agent for a large part of the day. We are, therefore, interested in viewing the teacher as a constructive social agent in the child's environment. However, we also became interested in teachers via another, more practical path. Faced with selecting and training groups of teachers, we became curious as to what kinds of information we were using when we decided that Person A would be a suitable teacher and Person B would not. After watching the progress of these teachers in the classrooms of DARCEE, it seemed to us that we could see differences in the minute-to-minute behavior of different teachers which appeared to be related to their varying skills.

We began a pilot study with five teachers, each in a different classroom of culturally deprived five-year-olds. Samples of teacher behavior were gathered, again using specimen records, in two different settings, "greeting children" or similar setting and large group activity involving teaching or demonstration. Each sample is approximately 30 minutes long. These descriptions, too, are seen as documents of teacher behavior to be made available for analysis by us and others. They can serve as "case study" type material for teacher training purposes.

We have begun our current analysis of these records by dividing the teacher's behavior into "episodes." An episode is defined (Wright, 1967) as a goal directed action which proceeds in a single psychological direction and which has an identifiable beginning and end. These units can be reliably identified and again, we can subject them to a variety of analyses.

Preliminary analysis has shown, for example, marked differences between teachers just in number of episodes per unit of time in comparable settings. The behavior of some teachers appears to move continuously toward a goal for long periods of time, (long, uninterrupted episodes) while the behavior of other teachers appears to move choppily first in one direction then another (numerous episodes of short duration).
When we ask who starts and stops the teacher's behavior episodes, we find that the teacher with long, continuous episodes is also the teacher who begins and ends more of her own behavior units. The teacher with numerous short episodes does not as often start and stop her own behavior, someone or something else does. In your handout (page 10) are excerpts from the actual specimen records of two different teachers during the first minute of the day. They represent the two extremes described here. The teacher with numerous short episodes also appears to us to follow no planned schedule as was indicated by events in the records. An example of this can be found in the full record of Mr. Brown. At 3'00" into the day Mr. Brown says to the aide, somewhat anxiously, "Do you want to sing a couple of songs before we start this morning? Or maybe play some games?" Hesitating, the aide replies, "What do you want to play, Bingo?" Hurriedly, in a relieved tone Mr. Brown says, "Yes, Bingo." Here Mr. Brown clearly shows that he is not following a carefully thought-out plan of activities toward specific goals for the children. His behavior at school is much like that of Owen’s mother at home, coping with emergencies which arise rather than carrying out plans toward specific goals.

Early in our analytical stage we received "feed in" from the Demonstration section about factors to build into our analytical system. One of these was the suggestion that we look at whether the teacher's behavior is at all times relevant to the activity which she is supposed to be directing. This idea we were able to translate directly into judgments about certain kinds of episodes. Another suggestion was that we look at the extent to which a teacher engages in contacts with individual children as single targets of her attention. This involves some additions to our original analytical plan and this work is in progress at the present time.

Another source of feed in and feedback is the training of trainers of aides section in which a rating scale for teachers was devised. Here we have an opportunity to compare data from different approaches to the study of teacher behavior. We plan further joint efforts with this training of trainers of aides section.

Other categories of analysis of the episodes, some of which are described elsewhere, (Wright, 1967), will be used to delineate systematic differences and similarities among teachers. In our long term plan, we can relate these to such factors as teacher personality, classroom climate and child intellectual development.

The main practical problem for us, however, will be to try to find clues as to how to select teachers and to identify in behavioral terms ways to help teachers act as constructive agents in children’s environments.

Structure and planning are pervasive elements in both the child and teacher focused sections of this area of research effort. Although our data are still in a tentative stage, we have both a responsibility to and an opportunity in DARCEE to relate our work to the on-going work of others.
Reprise

Susan W. Gray

I hope the three presentations on the work of our center have served to put flesh on the bare bones of the idea which I attempted to present in the introduction to this session. We trust it has served to make concrete the way in which we attempt to carry on simultaneously and successively the work of our center in basic and applied research and in training.

So far the corner of the triangle labeled demonstration has not been discussed, and I do not propose to do so here except to mention that we see as one of the most important functions of our center those things we have categorized as demonstration. The size of this part of our operation is one of the continual demands upon the time and energy of the persons in our center. For example, last year we had about 2,000 persons visit our program. Some were classes or special seminar groups, but many were individuals. A number of whom had to receive the VIP treatment. We are particularly concerned with effective modes of presentation for various kinds of consumers, ranging from the most unsophisticated aide in a Head Start program to persons such as you. You may refer to the layout sheet for a picture of the scope of these activities. Although time-consuming we believe these activities are an integral part of our mission.

And now for a final appraising look, before turning it over to our patient audience, at the model we have been trying to present. It has strong points and drawbacks. One point of difficulty is the placing of a heavy load upon communication and planning activities. Research, training, and demonstration are not separate sections of our center; they are closely interlocked activities in which most of us must serve as utility players in our particular baseball game and occupy various positions from time to time.

Another point of tension is that this is a long range program, not one the value for which can be seen in a month or year. But it is in an area where the public is eager for a quick payoff. Intervention research is not quick and dirty; it is dirty right enough, with the endless adjustments that must be made in field research over time with growing children, yet it is anything but quick. Since it is not hit-and-run research, we must live with the consequences of our efforts over time. We cannot take the psychologist's analog of the physician's burying of his failures nor yet the expedient of the architect, or so Frank Lloyd Wright described it -- of urging his client to plant vines. We do not "sacrifice" our subjects, nor yet undeceive them in debriefing sessions. They as well as we must live with the consequences of our activities, a realization that is both troubling and humbling to us.

On the other hand, we believe that the particular combination of circumstances which make it possible for us to try out this model, within a framework of
concern for the educability of young deprived children, makes such an opportunity irresistible. It will require all the wit and wisdom, the patience and the doggedness we can summon up. But if the price is high, the possible return in developing a useful model for attack on a major social problem of our time is more than worth the cost.
<table>
<thead>
<tr>
<th>Criterion Variables</th>
<th>Instruments Used with Mother</th>
<th>Instruments Used with Child</th>
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<tbody>
<tr>
<td><strong>APTITUDE</strong></td>
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<td>Binet$^2$</td>
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<td>DARCEE Children Concept Test$^2*$</td>
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<td></td>
<td>DARCEE Vocabulary$^1$</td>
<td>Metropolitan Readiness$^3$</td>
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<td>Sigel Cognitive Sorting Task for Children</td>
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<td>2. Parental Guidance of Child's Educational Development</td>
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<td>3. Opportunities for Conceptual and Perceptual Development</td>
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<tr>
<td>4. Organization in the Home Management</td>
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Footnotes:

1. To be used fourth semi-annual testing session
2. Used with younger siblings (* only)
3. To be used prior to regular school entrance
Figure 1: Average WAIS IQ Scores for Mothers Over the Three Criterion Test Administrations

Table 1
Mean WAIS IQ Scores for Mothers Over the Three Criterion Test Administrations by Treatment Groups

<table>
<thead>
<tr>
<th></th>
<th>Maximum Impact</th>
<th>Curriculum</th>
<th>Home Visitor</th>
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<td>FSIQ</td>
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<td>87.36</td>
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Figure 2: Average Binet IQ Scores by Treatment Group Over the Three Criterion Test Administrations

Table 2
Mean Binet IQ Scores for Children Over the Three Criterion Test Administrations by Treatment Groups

<table>
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<td>I</td>
<td>90.72</td>
<td>90.65</td>
<td>82.92</td>
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<td>II</td>
<td>100.22</td>
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<tr>
<td>III</td>
<td>104.39</td>
<td>105.47</td>
<td>92.33</td>
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MI = Curr > HV (I, II, III)*
I < II < III**

*,01    ** ,005
## Demonstration and Research Center for Early Education
### Training of Teacher Aides—Criterion Tests

<table>
<thead>
<tr>
<th>Criterion Variables</th>
<th>Trainers</th>
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<td>Binet (on sampling basis)</td>
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Sample from Home Ecological Study

Subject: Owen Edward Culster
Date: 2-28-67

There are five children in the family. The 20-year-old mother is a pretty, thoughtful woman who was married before she was 16. The baby, Earl, is not quite a year old, Oliver is 2, Owen is 3-1/2, Opal is 5, and Wanda is 6.

The children have been running around outside. Owen has just come in and is standing just inside the door, fingering a bag full of clothes which is on a small chest to the left of the door.

E.F.U.

With very careful motions, he tries to push the bag top, so that it closes around the clothing. This is very deliberate, very careful, as if he is very absorbed in it.

Wanda: Responding to Owen's game

He turns abruptly and spanks Wanda who happens to be standing right next to him. She turns and spanks him, grinning broadly. Both children then grin broadly as if ready to begin a game again.

20'10" He wanders into the kitchen-living room area, abruptly leaving Wanda.

The baby is now propped up on the couch, momentarily quiet. Owen walks all the way over by the window in the kitchen area. Suddenly, he turns and walks back toward the couch. He stops and looks at the baby.

Baby: Responding to Owen

He leans down and talks to the baby. I cannot hear what he says nor how he says it. The baby looks at him intently and smiles.

He abruptly gets up and walks back into the little entryway.

He fingers the bag of clothes. Very carefully, he begins to rearrange the top of the bag, smoothing it out with the palm of his hands. He pushes the top of the bag with delicate finger motions.

The other children are still squealing but at a somewhat lower level than before. The baby starts to cry again. As if noticing this, Owen stops what he is doing and walks into the living area where the baby is. He walks purposefully to the couch and looks critically at the baby.

Mother: Ignoring Owen

He calls, "Mommie," in an accusing tone. His mother does not respond at all to this. She is in the kitchen area with her back to him at the moment. She may not have heard him. She sits down on one of the stools and just sits there for several seconds, looking very blank.
He stands momentarily, blank-faced. He walks over to the kitchen area. "Ma," he complains noisily to her. He walks over to where she is sitting as he says this. "Ma-Ma!" he says again more demandingly. He walks behind her to her left.

He touches her on the shoulder several times lightly. "Ma, ma-ma, ma," he repeats, still demanding and whiny.

She turns and smiles at him, a far-away look on her face.

Meanwhile Opal, Wanda, and Oliver have gotten up on the stools around the counter. They move to sit on the edge of the counter nearest the living area. Oliver sits on a stool to the right of his mother.

The mother begins explaining to Wanda about a picture from her wallet. "No, that's me!"


The mother is quite engrossed in looking at the pictures and does not even show awareness of his presence.

"Ma-aa," he drawls out the word, screaming it. "Ma-ma!" he repeats.

She looks down at him as if suddenly aware of him. In a very scolding, angry way she slaps his hand.

He shouts fiercely, "Gimme that!" referring to one of the pictures. He shows no reaction to the mother's slap.

"No, I keep those pictures in here," she says firmly, explaining that she wants to keep the pictures in the wallet.

"I've two pictures in here I want to keep in here," she says, still explaining.

The other children are squealing, shouting, vying for her attention. Mrs. Culster had turned on the television while we were outside, so the television is on and the baby's crying. The other children are screaming around her. Owen is the only one of the four who is screaming at her, directly, so that it is small wonder that she does not notice him. She seems on her part, to be completely engrossed in looking at the pictures. The noise level is so high that it comes through the Stenomask despite the fact that I have got it pressed closely against my face. The noise that one hears in the Stenomask consists of piercing shrieks that sound like "Ma" or "Da" but not recognizable words.
Owen turns his back so to speak, to the group. He walks to the end of the counter and hoists himself upon a stool.

He reaches over to pick up a Leslie's salt shaker. Very deliberately, he looks carefully at the outside of the package. Deliberately, too, he turns it upside down pouring a large amount of salt into his hand. He puts the salt shaker down.

His mother looks over at him briefly, disgustedly. She turns away.

He sticks his tongue out as if to taste the salt, gingerly. He closes his eyes as if against the shock. He puts his face down toward his hand and finally does stick his tongue into the salt. He makes a "terrible face," grimacing, a disgusted look. He begins to spit a little bit. Not really spitting things out, but making "fakey" spitting motions and sounds. He looks over at the salt container very thoughtfully. He turns his attention back to his hand as if trying to put two and two together. Abruptly he stretches his left hand over to the salt container. He tries to pour the salt back into the container from his hand. He is quite engrossed in this. He spills some of the salt accidently.

Mrs. Culster gets up, suddenly aware of his actions. She scolds fiercely, "Put that up!" She reaches from behind him and puts the salt container back where it was.

He sits, expressionless.

She goes purposely over to the sink and gets a wash cloth. She looks down at Owen Edward as if she would really like to "whop" him one; her look carries all kinds of meaning, which could be interpreted as "just wait 'til she leaves, and I'll really let you have it." "You know you shouldn't do that," she says crossly.

23'00" She wipes up the salt with the wash cloth.

She looks again at Owen with the same cross, angry look on her face as before.

He continues to sit stony-faced.

She then walks back toward the sink, rinses out the wash cloth.

2 minutes and 50 seconds of observation time.

9 E.F.U., 3.18 E.F.U. per minute

Each unit represents an action by an environmental agent which occurs, (1) vis-a-vis the child, (2) is directed by the agent toward a recognizable end-state with respect to the child, and (3) is recognized as such by the child.
The following are excerpts from 30 minute specimen records of teacher behavior. They are of the first minute in the teacher's day. Both of the teachers were functioning as head teachers in the classrooms of intervention projects for five-year-old culturally disadvantaged children. Each teacher had other aides working with them in the classroom. The children had been in school for approximately six months at the time of the observation. The records have been unitized into episodes, which were the ecological units used for the present study.

**Mr. Brown**

0'00" Mr. Brown enters the room slowly.
He has a box in his hand which says "Singer Company" on it. He brings in the box and places it on a small table in the center of the north wall of the room.

He goes to his desk.
He looks at the desk as if looking for something but not really expecting to find it.
He picks up a pencil.

A child comes up and asks Mr. Brown a question.
He says, "Hmm?" in an absent-minded manner not looking at the child.
I am not able to tell whether or not he responds further to the child.

He picks up his register.
He walks across the floor to the center of the room.
He says, "All right, everyone put your coats here on the desk," in a bland expressionless command.
He indicates the children's desks in the center of the room.
Then he says, "All right, you too," to a child.
He gestures indicating that the child should put his coat on the desk.

**Mrs. Hart**

0'00" Mrs. Hart goes to the door leading to the outside and opens it.
(This apparently constitutes a signal as children begin disembarking from the school bus and coming into the school.)

She says brightly, to the first youngster as he enters the room, "Hi there, Calvin," smiling as she does so.
Calvin smiles at her and says quietly, "Hi."

He enters the room.
She says, with interest to the second child as he enters, "Wyatt, how are you this morning? What a nice red hat."
Wyatt smiles and goes on into the room.
Another child enters.
Mrs. Hart says cheerily, "Good morning, Greg."

A little girl is coming slowly toward the door.
Mrs. Hart says in a quiet but friendly manner, "Good morning, Polly."
Polly apparently mutters something under her breath, as her lips move, but I cannot hear what she says.

Mrs. Hart smiles at Polly but does not press further conversation.
Polly enters the classroom.
A small Negro boy enters the school.
Mrs. Hart says enthusiastically, "Paul, what a lovely smile you brought today."
A little girl enters the room.
Mrs. Hart looks at her and says, "So did Gwen."
Appendix
DEMONSTRATION AND RESEARCH CENTER FOR EARLY EDUCATION

Project Components

RESEARCH

Intervention Studies
- Mother training
- Young children 3-5
- Infants

Ecological Studies
- Mother-child interaction
- Teacher effectiveness

Basic Child Development Studies
- Character development
- Cognitive development and style

Training Effectiveness
- Subprofessional
- Teachers and supervisors

TRAINING

Career Programs
- Doctoral study
- Education specialist
- Master of arts
- Undergraduate study
- Special purpose training

Short-term Program
- Head Start institutes
- Consultation services
- In-service workshops

DEMONSTRATION

Three Early Training Centers
- Urban housing project
- Campus
- Rural district

Observation
- College classes
- Visitors to program

Dissemination
- Research publications
- Information publications
- Newsletter
- Speaking engagements
- Conferences

Materials Development
- Teaching materials
- Curriculum materials
Mr. Brown pats two children on the head absently as they walk past him.

A girl asks for some help in unbuttoning her coat.

Mr. Brown walks across the room to the desk where the child is standing.

He puts the register down on the desk.

He bends over toward the child.

He unbuttons her coat.

He straightens up again.

The child takes off the coat by herself and she starts toward the coat stack on the cots.

Mr. Brown picks up his register again.

He stands watching the door without expression as other children and the aide enter.

Mr. Brown walks across the room and around a desk.

He bends to help a second child take off his coat.

(I do not know who made the first move here.)

Mr. Brown takes the coat from the child.

He walks purposefully across the room putting it on the stack of coats on the cots.

He turns around facing the children in the room.

He says, "Okay, let's have a seat," in a flat, toneless voice.

The children begin to sit down.

He pats a child on the head again absently as the child walks past him.

He walks slowly to the center of the room still holding his register.

A little boy enters.

Mrs. Hart asks in a friendly greeting, "George, how are you today?"

A child enters with a doll.

Mrs. Hart says to the child with interest and enthusiasm, "What a nice baby doll she brought today. Hi there, Yvonne."

Another child enters.

Mrs. Hart says in a friendly manner, "Good morning, Emil."

She adds in a teasing voice, "Hey, where's that smile?"

Emil smiles tardily and as if with some effort.

Mrs. Hart says with approval, "There it is," as she smiles back at the boy.

Another child enters and Mrs. Hart says gently, "Good morning, Joseph. We're going to have a nice day today, aren't we?"

Joseph looks at Mrs. Hart as he continues on into the classroom, but I do not see that he responds verbally.

A little girl enters the room.

Mrs. Hart says in a friendly manner, "Faye, how are you?"

She says in mock ferocity, "Hey, I didn't see you pausing to look at the child with widened eyes."

The child smiles at her.

"There's that smile," she says approvingly.

Mrs. Hart returns the smile.

Another boy enters.

Mrs. Hart says brightly, "How are you, Willie?"

Another boy enters and Mrs. Hart says with interest, "......... how are you today?"

Another little boy comes slowly toward the door.

Mrs. Hart smiles as if amused and says, "Who's this?"

The boy quickens his step and smiles hesitantly at Mrs. Hart.

Mrs. Hart says warmly, "Hi, Wade."
He stands there briefly for a minute and then moves toward the door.
He turns on the light.
He opens the door and goes outside the room.

He looks behind the door. I cannot see what he is doing.

After a very short period of time he comes back into the room.
He closes the door.
He walks slowly toward the center of the room.
He holds his register up at a comfortable reading level.
He calls several names.
He glances around the group briefly.
1'00" He says, "Sit down, Gerry, we can get the roll."
He continues calling the roll.

Another child enters and Mrs. Hart says in a friendly manner, "Good morning, "

The driver calls to Mrs. Hart that some child is ill today.
Mrs. Hart says with interest, "Oh, she is? Thanks so much."

1'00" She turns around, coming into the room, closing the door after her.