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THE DEUTSCH INTERVENTION MODEL IS BASED ON THE THEORY THAT ENVIRONMENT PLAYS A MAJOR ROLE IN THE DEVELOPMENT OF COGNITIVE SKILLS AND OF FUNCTIONAL USE OF INTELLECTUAL CAPABILITIES. DISADVANTAGED CHILDREN HAVE INTELLECTUAL DEFICITS WHICH MAY BE OVERCOME BY USE OF MATCHED REMEDIAL MEASURES. LANGUAGE SKILLS AND MOTIVATION CAN BE IMPROVED BY TEACHING STANDARD ENGLISH AS IF IT WERE A SECOND LANGUAGE. NAMING AND LABELING OBJECTS AND DIALOGUE PRACTICE ARE STEPS TAKEN TO INCREASE LANGUAGE ABILITY WHICH HOPEFULLY LEAD TO MORE COMPLEX LANGUAGE USAGE AND MINIMAL DIFFICULTY IN LEARNING TO READ. IMMEDIATE INDIVIDUALIZED FEEDBACK, EITHER CORRECTIVE OR CONFIRMING, IMPROVES LEARNING. A SECOND INTERVENTION AIM, PERCEPTUAL AND CONCEPTUAL DEVELOPMENT, INVOLVES STIMULUS RECOGNITION, DISCRIMINATION AND DIFFERENTIATION. CHILDREN ARE THEREFORE TRAINED TO FOCUS ON RELEVANT STIMULI AND TO RECOGNIZE, DISCRIMINATE AND CATEGORIZE THROUGH CONCRETE OBJECT MANIPULATION. TIME ORIENTATION IN ACTIVITIES GIVES A DISADVANTAGED CHILD, WHO MAY HAVE HAD LITTLE ORDER OR ROUTINE AT HOME, A SENSE OF SEQUENCE OF EVENTS, EACH OF WHICH HAS A BEGINNING, A MIDDLE, AND A CONCLUSION. TO ACHIEVE THE GOAL OF FOSTERING A CHILD'S DEVELOPMENT OF SELF-RELIANCE, ACHIEVEMENT MOTIVATION, AND A POSITIVE SELF-CONCEPT, TEACHERS VISIT CHILDREN'S HOMES BEFORE THE OPENING OF SCHOOL AND ENCOURAGE PERSONAL NAME USE FOR IDENTIFICATION. IN THE CLASSROOM, A FULL-LENGTH MIRROR AND POLAROID CAMERA PHOTOS, CREATIVE DRAMATICS, AND OPPORTUNITIES FOR VERBAL EXPRESSION HELP CHILDREN CREATE POSITIVE SELF-CONCEPTS. (MS)

The Deutsch Model:
Institute for Developmental Studies
New York University

One of the pioneers in the field of early childhood education is Martin Deutsch, Director of the Institute for Developmental Studies at New York University, who has had experimental preschool classrooms for disadvantaged children in operation since 1962. The classrooms are in public schools in the heart of the Harlem ghetto; the children come from tenement homes that are economically, socially and culturally deprived. And as study after study so drearily shows, such children usually experience severe school learning disabilities beginning with difficulty in learning to read in the primary grades, and all too often end up as school drop-outs. A language handicap contributes to their difficulties, and so the intervention program developed at the Institute places a great deal of emphasis upon improving language skills.

The Deutsch model is based upon three major premises: 1) The intellectual deficit caused by early cultural deprivation cannot be made up for by putting children in a typical middle-class nursery school; they need more direct emphasis upon cognition than is provided in programs based upon learning through play. 2) To overcome deficit, there must be a carefully planned match between specific deficit and remedial measure. 3) The language handicap of children from disadvantaged homes, like their other handicaps, is not a matter of intellectual skills alone; motivation, too, is important. The child must want to do well in school

and to develop behaviors that contribute to school success.

The sections that follow describe certain general features of the curriculum, and also detailed description of some of the special activities that have been developed to overcome the children's language

These sections have been prepared by Dr. Deutsch and the Institute staff.

Pre-Kindergarten and Kindergarten Curriculum
General Description

In January, 1962 the Institute began its pre-kindergarten enrichment program based on traditional notions of nursery school curriculum as a starting point. The philosophy upon which traditional nursery school activities have been based comes from Rousseau. In essence, this philosophy sees the development of a child as a natural unfolding process in which the role of the teacher is to support his natural inclinations by not imposing directions external to the child. The basic ingredients she supplies are warmth and affection. For advantaged children, such a program works quite well. The advantaged child lives in an environment rich in varieties of experiences; available to the child are adults who have had enriched experiences and who wish to share them with the child; a large amount of stimulation and teaching of the child continues from the time he is born; both teachers and parents hold the same expectations of the child; the culture of the child is continuous with and contiguous to the culture of the school. The advantaged child, therefore, brings with him to his first day of school a wide range of basic knowledge and skills. As studies by the Institute and others revealed more and more information about children and learning, it became obvious that traditional curricula did not fulfill the needs of disadvantaged children. Thus, while children in the Institute pre-kindergarten and kindergarten classes continue to experience learning in a pleasant play setting, the experiences the children gain and the interactions they have with teachers are carefully conceptualized, organized and programmed.

There are several basic theoretical assumptions which are at the foundations of our thinking and our programming. One assumption is that environment plays a major role in the development of cognitive skills and of the functional use of intellectual capabilities. Our task, then, is to provide a physical and psychological environment within the school that is appropriate to the development of our children.

The physical environment we provide is the classroom. Our goal is to present stimuli in an orderly, clear mode that is appropriate and relevant to the ages, sizes, and developmental levels of the children. Some of the goals for the children are to learn to focus on relevant stimuli; to place irrelevancies in proper perspective; to develop skills of auditory and visual perception and discrimination; to verbally and motorically classify, sort, and match ideas and objects in the environment; and so on. To achieve those goals, we stress order and clarity not for their own sake, but because they facilitate learning. A perceptually clear and distinct room environment can help the child focus his attention on the curriculum instead of distracting him with irrelevant or diffused stimuli. We achieve this through uncluttered arrangements of equipment and furniture.

We begin by physically defining specific areas of the room. The block area, book corner, art area, doll and housekeeping area, and so on, may be defined by low pegboard panels, shelving or carpet. Some areas remain fairly static or slowly change during the year (e.g., the science display area). The elements in the room and their mode of arrangement can determine how children spend their time. The actual arrangement then is a factor of the curriculum.

The psychological environment we try to provide is a classroom climate or atmosphere conducive to learning. Our goal is to foster the child's development of self-reliance, achievement motivation, and a positive self-concept. Some of the goals for the child are to demonstrate his ability to be relatively quiet and attentive, to be self-reliant, to treat equipment and peers with respect, to respond to verbal requests of the teacher, to express his own needs verbally.

The climate is dominated by a time orientation. From the beginning of the school year the teacher establishes routines, daily use of class time until the child is secure in his knowing what has happened, what is happening, and what will happen. Only after he has a firm base in the routines are the routines greatly varied. He learns that each activity has a beginning, a middle, and a conclusion and that there is a sequence of events.

The climate also carries notions of cooperation and responsibility. For efficiency, there is a cooperation between teacher and children and among children. Each child has a responsibility for himself, for the care of equipment, for the conclusion of each of his activities.

Another of our major assumptions is that some kinds of skills and abilities are basic to others. We also assume that cognitive development, which includes skills and abilities, proceeds by stages or at least from one level of functioning to another.

With this in mind, we have identified four major areas of development for emphasis in the curriculum. These four areas designed to facilitate cognitive development of the child are: 1) language

2) perceptual 3) conceptual and 4) a positive self-concept.

Our task is to design activities that commence with the child's use of the most rudimentary forms of skills and knowledge and proceed developmentally through succeeding levels of greater complexity. For example, we would have the child learn to recognize and label one shade of one color (blue, let us say) before we would ask him to tell us everything in the room that is blue. A simple sequence in color learning might begin by giving a child a number of identical objects all of which are colored the same shade of blue. He is told the proper label, and uses this label as he handles the objects. A second set of objects identical to the first but of a different, single shade of color is given to the child. Again, he is given the proper label and he handles the objects. The sequence continues by having the child sort a mixture of the two sets into the two classifications of color.

Steps within each sequence must be small enough for the child to cope with. After he has learned to sort correctly two different colors, perhaps he is ready for the introduction of a third color. The total number of objects comprising the three colors, however, might require a reduction if we are not to overwhelm him. What to us might seem to be tiny steps are usually giant strides to the disadvantaged child.

After the child has had several color learning experiences and several shape learning experiences, we can ask questions of him commensurate with these experiences. The questions, "Are you holding

a blue circle or a yellow circle?" varies only one element, color. Sequentially this question would precede the more complex task presented in, "Are you holding a blue circle or a yellow rectangle?" Here, both elements vary. Further along the sequence we might ask, "What are you doing?" Whatever the required response is, it must not be beyond the child's ability.

Proper pacing allows the child to proceed from element to element at the rate most comfortable for him. As he works his way through a sequence, he may be capable of rapidly devouring some steps, or he may require relatively greater amounts of time with other steps. Pacing is an individual matter, and, if this matter is sacrificed by the teacher for reasons of expediency, then the child might be pushed ahead while "soft spots" or incomplete notions might remain to plague him. For the disadvantaged child this could be especially disastrous. His environment might not provide him with means to fill in the gaps. It is the teacher's responsibility to insure his learning of basic skills and information at each step of the way.

Feedback, the response from the materials or teacher that gives the child confirming or corrective information, is a vital consideration. Through feedback the child learns which track he is on, which stimuli he should focus upon. He receives reinforcement of prior learning; he receives affirmative or corrective response to his applications of learning. The more immediate the feedback to his response, the more impact on learning can the feedback have.

A problem of feedback immediately arises in group teaching situations. Group response prevents the teacher from recognizing individual problems; the teacher, therefore, cannot be certain that her feedback to the group is adequate for each individual. The problem is manifest when the teacher responds to the most verbal or loudest children in the group. In responding to these children, she might miss completely a major portion of the children. The problem is compounded when we teach young children because they are quite limited in the varieties of responses they can offer to a given situation. Feedback problems in group situations suggest that a more individualized approach to the teaching-learning experience may be more profitable for certain kinds of learnings.

The individual child isn't the only one who profits from feedback. He provides feedback to the teacher, and she learns how the child perceives his task, at what level he is operating, at what speed he is moving, and how effective her teaching is.

Our goals in language development include a child's vocabulary development, general ease in self-expression leading to lengthy but meaningful verbalization, greater exactness in sound discrimination, and precision in use of language. Although these goals include both quantitative and qualitative aspects, the language training is not presented to the child as an isolated "subject," but as a vital ingredient spanning every activity.

Language goals for the child include demonstration of his ability to correctly label items in the environment, such as persons, places, and objects; to use articles and other adjectives, adverbs, verbs and prepositions in extended patterns; to participate in verbal interchanges such as prolonged

question and answer sequences.

Many children entering the pre-kindergarten enrichment classes do not seem to know that people and objects have names. The teacher, therefore, calls each child by his own name as often as possible and requires the child to call her by name. Every day, one teacher greets each child at the door to the classroom and speaks briefly with him; the other teacher is at the coathooks and follows the same procedure. In a short space of time Joey has heard his name at least twice, and he has also greeted Miss Smith and Miss Jones, not "teacher" or "teach."

The beginnings of mathematical concepts are here: one person, one name; a one-to-one relationship. Joey soon discovers that each person has two names--a two-to-one relationship. If there are two Joeys in the class then there is all the more reason to discover that each person has two names. And now, the door is open for learning about the concept of "first," and "last," and "second."

As the child explores the room environment and objects, the teacher, taking her cue from him, supplies him with the correct labels. She speaks to him and encourages him to relate his experiences, to connect his thoughts and words into sentences., to expand his verbal output. The approach is comparable to teaching standard English as a second language.

Every person and thing in the classroom and beyond is material for use in language development. But we have to be more direct. A guiding premise is that we place emphasis upon the use of materials in relevant

ways, ways that are relevant to the issue and activity at hand and also to broader knowledge about learning and development in early childhood. For example, our children take several trips to places of interest. These trips to such places as the zoo, a bridge, the river, boats, the park, firehouse, pet store, and so on, have great potential not only for language, but also for many kinds of learning. Not long ago one of our classes went to the zoo. Now, one of the main goals of this trip was to learn about animals. The children had a great time, but when they returned, the teacher could hardly get the children to talk about the animals. The children saw the animals, but the thing they really attended to was the fact that at the zoo there was a little hill covered with green grass and they rolled down this hill. A point here is that teachers must be aware that when they think they are teaching one thing, the children may be learning another, or they may not be learning anything. A second trip to the zoo was necessary.

Another productive technique is oral story telling--by children or by the teacher. It is especially productive combined with dramatic play. For example, the teacher might read CAPS FOR SALE to all the children, showing them the pictures in the book. She might repeat the story, using flannel board materials. The next day the children could be called upon to recall the story while acting it out. One child could be the salesman and the others would be monkeys. Several variously colored pieces of flannel could serve as hats. The tasks for the children include recalling the past, following a sequence of events, using language while acting out

several concepts, labeling colors and objects.

Books play an important part in the development of language. Among the criteria applied in our selection of books are such things as relevance of content to the experiences of our children, the opportunities offered by the text and illustrations for language development. The books that are most successful in Institute classrooms are straightforward in their use of words and illustrations. Books that are wildly fanciful in story, in words and in illustration are almost incomprehensible to the children. Such books are certainly acceptable in other situations, but our children must develop firm perceptual and conceptual bases before embellishments, distortions, incongruities, or abstractions can be enjoyed.

As the Institute teachers find out which stories the children take as their favorites, the teachers record them on tape which the children use on tape recorders in separate, partitioned areas in the classroom called Listening Centers. The child can then listen to his teacher tell him his favorite story over and over again, even though at that moment she is somewhere else in the room. The teachers also record supplementary tapes in which they ask questions about the story. The teacher asks a question and pauses long enough for the child to respond; then she gives the answer before asking the next question. For example, the teacher asks, "What did Peter see when he awoke and looked out the window?" Pause "Did you say snow? Yes, he saw snow." The teachers also help to prepare special illustrated materials to accompany the tapes. There is evidence that children become engrossed in listening and responding to the tapes. One little boy, when the tape said, "Did you say snow?", responded with, "Yes, ain't you listenin'?" Each child listens through large, padded

earphones, for several reasons: the novelty of wearing them engages the child, forcing his attention; the padding eliminates peripheral noise that might otherwise easily distract him. Listening Center materials, facilities, and use become more sophisticated in the kindergarten years and beyond.

Another auto-instructional device in use in Institute classes which has proved effective at the early levels for building vocabulary and for developing some such basic concepts is the Language Master. Analogous to a two-track tape recorder used in language labs, the Language Master also uses a laminated card with space for pictures or symbols, thereby allowing the child to integrate auditory and visual stimuli simultaneously. For example, the child can listen to the teacher saying, "This is a pencil," watch the picture of a pencil go through the machine at the same time, and record his own response for comparison to the teacher's model.

One of the most useful devices the Institute has found for stimulating language is the telephone. It fascinates children who are quite limited at home in their use of a telephone; they can role play, imitate adults, express themselves with impunity. In our classrooms there are two telephones separated at some distance from each other. The physical separation requires the speakers to raise their voices and speak more audibly and distinctly. If the speakers can see each other, however, this allows them to point and use "body English" for communication rather than words.

As part of a special language study, the Institute constructed some small cardboard telephone booths with real telephones connected to each other and to a tape recorder, which recorded the children's spontaneous speech. The purpose of the booths was to give each child privacy and to shield him from the sight of the person to whom he was talking. When he was talking to a researcher and the researcher would say, for example, "What are you playing with?" and he would respond, "That," and probably point to "that," the researcher would say, "I can't see you. Tell me in words." The teacher can accomplish the same thing without a phone booth. When she is talking on the telephone to a child, all she has to do is turn her back to the child and say, "I can't see you. Tell me in words."

Another technique used in our pre-kindergarten and kindergarten classes for the development of language is the game Language Lotto (developed by Dr. L. Gotkin) which differs from standard lotto games in that it can be played at different language and conceptual levels, ranging from nonverbal matching, to verbal matching or pictures, requiring complex cognitive skills. Standard lotto games are usually restricted to nonverbal visual matching of pictures.

A technique that began in the name of developing a positive self-concept, turned out to be one of the most productive language stimulators. Each class has a camera so that the teacher can take pictures of each child at different times during the year. At Christmas time the child makes a small folder and takes home an album of photos as a present to his family.

The reaction from children and parents is most positive. No other object has stimulated as much language from individual children as have the photographs. While looking at a photo of himself, the child is encouraged by the teacher to recall what he was doing, where he was, who else is barely visible, how much bigger he is now, and so on. He becomes more aware of himself as a person.

There is a body of evidence indicating that a person's perception of himself can affect his approach and response to a learning situation. Work at the Institute indicates that the younger the child, the less able he is to think of himself as an object possessing characteristics that differentiate him from others, and that he can be perceived as such by others. The younger the child, the less stable his self-concept, if he really has one. Not only does the younger child's self-concept appear to be unstable and not well-formulated, but also, in contrast to the older child, he is less well equipped to verbalize his concepts of self. The lack of developed verbal ability is especially apparent in many of our children.

Among techniques we employ that we believe to be helpful in developing a child's positive self-concept is the visit by each team of teachers to the homes of the children in their classroom. The visits occur during the week or so before school commences. The purpose of the visit is to meet the child and his family, to begin the use of names, and to invite the parents to visit class and to attend parent meetings. A small story book is left with the child as a gift.

The classroom has a full-length mirror in the dress-up corner. For many children this is their first experience at seeing all of themselves at on time. There is also a hand mirror so that one can see himself and others from different perspectives. Stories and songs using the children's names in which the children participate seem to be helpful. The sheer fun of handling materials and a feeling of mastery seems to be helpful. Success breeds success. We suspect, too, that it would help if we occasionally took a Polaroid photo of a child's block building or clay modeling. A child can totally involve himself in building a block structure or modeling a work of art. Then - it's cleanup time; put the blocks away, pick up the clay and put it away. Perhaps a photo, taken the moment the child completes his work of art, presented to the child as a remembrance of his efforts would lessen for him the pain of having to destroy his creation.

Another useful technique is the use of role playing or creative dramatics. Just as language or self-concept are not "subjects" that are taught, neither is role playing. Instead, the children are encouraged at whatever point is appropriate to act out verbally and physically the activities in which they are engaged. Even the young children seem to gain in understanding of themselves and others as they actively demonstrate their perceptions of a given situation. Creative dramatics has been effective not only in helping the child come to know himself and others, but to articulate his feelings and thereby extend and elaborate his language and his cognitive grasp of his environment. We are encouraged in our efforts in the use of

this technique thus far and are pursuing its possible applications for enchancing children's learning in such curriculum areas as language arts, social studies, etc.

A third major area of the cirriculum is perceptual development. This, too, is not a "subject," but is an area of several activities. Our goal is to enhance children's direct, sensory skills. We want to develop a child's powers of stimulus recognition, discrimination, and differentiation.

Disadvantaged children tend to come from "noisy" environments. Noise, in the sense used here, comes in several guises. Of course, there is audible noise, but there is also visual noise. Noise is superabundant chaotic stimulation. The disadvantaged child doesn't always suffer from a lack of stimuli. Quite the contrary, part of his problem comes from too many stimuli. But the stimuli have a great deal of sameness to them, a monotony, to the point that he develops his ability to simply tune them out. Besides the lack of variety of stimuli, the available stimuli are usually not sufficient to facilitate the perceptual development of the child. Frequently, adults aren't available to the child - adults who can teach and train the child to focus on relevancies, to recognize, to discriminate, to categorize.

The child's auditory goals are to demonstrate his ability to recognize common sounds; to discriminate among children's names, among verbal directions; to differentiate sounds of different pitch and volume. For example, the child listens to recordings of common sounds and selects from toys or pictures those that represent the sound he hears. He also

learns to name the sounds. The Language Master has been a useful tool in presenting both an auditory and a visual stimulus.

The child's goals, visually, are similar to his auditory goals. Visually he is to demonstrate his ability to recognize such things as common shapes and colors; to discriminate among shapes, colors, sizes; to comprehend symbolic representations; and to differentiate subtle differences and similarities in configuration as a prerequisite to reading.

In training visual discrimination, both manipulative and symbolic equipment and materials are used. The Letter Form Board is an example of an Institute developed technique to foster visual discrimination as a preliminary step to learning to read. Resembling a puzzle, it contains the 26 letter-shaped indentations. The child places the appropriate three-dimensional letter in the proper indentation. There is an upper case board and a lower case board. With pre-kindergarten children the board is initially presented as a puzzle. A suggested sequence of use has been developed. The board can be called a modified "teaching machine" because it clearly has three of the four major attributes of teaching machine technology: 1) small steps, 2) immediate feedback, 3) individual pacing, and 4) careful sequencing. The unit is a single letter; the letter cannot be put in the wrong slot; the child paces himself. The child is not presented with the entire alphabet at once. He begins with just a few letters at a time and progresses to the entire alphabet gradually.

Quite briefly, after the child is familiar with the board and has had experience with his printed name, then perhaps he is interested in the fact that letters have names. Some children enter the class already knowing something about alphabet names. But generally, a child has experience with the board, he begins to learn the letter names, and has experience replicating hiw own name. He is provided with a printed model of his name and the duplicate "alphabet" letters that replicate his name. All of these experiences, plus others, can lead him eventually to reading. The experiences are developmental; a child's rate of progress is an individual matter.

It is apparent that perceptual training activities are also potent means for helping children to learn concepts. We use activities and materials that provide contrast and lend themselves to classification, sorting, and matching. For example, when a child identifies sounds, he can also learn to classify them into such groups as people, animals, things. When he is presented with contrasts in pitch and volume, he can learn several polar concepts such as high-low, or loud-soft. When he plays with blocks he can, with help, learn relative sizes or shapes.

Even putting the blocks away is a learning experience. The blocks are stored so that their most individual characteristic size or shape is visible. Silhouettes of each different block are painted on the shelves so that the child can make a 1:1 comparison, the beginnings of mathematics.

Some of our goals in concept development are to help the child to learn basic physical concepts; to relate, classify, and generalize about traits of ideas and objects.

Some of the child's goals are to demonstrate his ability to identify objects on the basis of their size, shape, color, number, and so on; to group together similar objects; and to generalize about their common traits.

Our vehicles of instructions are concrete objects, books, pictures, are activities, physical games, daily routines, songs, music activities, and so on. For example, while the children listen to a record of "Old MacDonald Had a Farm," they select the appropriate "2-dimensional" figures (more abstract) from a group of figures on the flannel board.

Clarity, simplicity, and concreteness are factors essential for training in concept formulation. The children require innumerable, sequential opportunities to classify objects, to classify the people, things, and events of their environment. Classification provides the child with the opportunity to acquire and use nouns, verbs, prepositions, and adjectives, all of which help the child acquire and comprehend more advanced and complex concepts.

To help both the child and the teacher focus on those activities which stress cognitive development and skills, the Institute has found it useful to set aside a portion of the day from which all noise-producing activities are excluded and during which children, individually or in small groups work on activities that are directly related to cognitive development and formal learning. This Quiet Work Time (developed by Mrs. Fay Fondiller and Dr. L. Gotkin of the Insititute) has been extremely valuable in freeing the teacher to work individually with children and in

A more complete description of some of the activities mentioned above is contained in a separate paper, "Games and Other Activities for Developing Language Skills," also distributed through ERIC.