7-14-1975

Development Of Environmental Responsiveness In Crib-Bound Profoundly Retarded Institutionalized Individuals Through Play

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This thesis, directed and approved by the candidate's committee, has been accepted by the Graduate Committee of The University of New Mexico in partial fulfillment of the requirements for the degree of

MASTER OF ARTS IN SPECIAL EDUCATION

DEVELOPMENT OF ENVIRONMENTAL RESPONSIVENESS IN CRIB-BOUND PROFOUNDLY RETARDED INSTITUTIONALIZED INDIVIDUALS THROUGH PLAY

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DEVELOPMENT OF ENVIRONMENTAL RESPONSIVENESS IN CRIB-BOUND PROFOUNDLY RETARDED INSTITUTIONALIZED INDIVIDUALS THROUGH PLAY

BY
JAMES DEAN DECKER
B.A., Southwestern College, 1970

THESIS

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The University of New Mexico
Albuquerque, New Mexico

August, 1975

ACKNOWLEDGEMENTS

I wish to thank:

Dr. Marian Shelton, Dr. Glen Van Etten, and Dr. James Everett, my committee members, for their participation and encouragement throughout this project.

The staff of Los Lunas Hospital and Training School, Los Lunas, New Mexico, for allowing me to carry out the procedures for this project. A special thanks belongs to Dr. Elizabeth Hirsch, Director of Education at L.L.H.&T.S., for her help and encouragement.

My wife, Connie, for her encouragement, proofreading, and help, which all seemed to be unending.

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Statement of the Problem

Staffing, facilities, and programming have been continual problems in institutional care of the mentally retarded. Gesell and Ilg (1946) examined the institution in respect to developing the "self" of each resident. This study concluded that the institutional setting limited the resident's development because impromptu situations which build love, affection, and the feeling of belonging in the normal child were not present nor provided for in the institution. Bijou and Baer (1965) described the institutional setting as not being conducive to building affection or appropriate behavior. Staff and time are at a premium in most institutions; therefore, attention for appropriate behavior is rarely consistently provided. Affection and appropriate behavior, according to Harris (1969), are developed in normal children through the physical presence, contact, and caressing behavior of their families. Close physical contact is rarely given for long periods of time in an institution.

Without changing the institutional setting significantly, opportunities for the child to develop with proper reinforcement for

appropriate behaviors are greatly limited. The opportunity to develop even initial responses to normally pleasurable experiences are limited.

Recently, though, a team of researchers from Florida developed a technique for working with children to develop the normal types of responses to pleasurable experiences, such as holding and caressing. A modification of their technique, "intensive play", was used in this project to parallel Harris's approach and provide the setting needed for the institutional child.

Procedures

Twelve crib-bound profoundly retarded residents of the Los Lunas Hospital and Training School, Los Lunas, New Mexico were selected for this project. They were selected to represent a broad range of ages, lengths of institutionalization, and physical handicaps. The population chosen included six males and six females.

Three behavior areas were selected for observation. These areas were responsiveness to adults, environmental objects (toys), and peers. Baseline data was collected on each behavior for each participant. A program of modified intensive play was initiated for one hour per day with three residents participating in the program at a time in the location of their usual daily placement in the cottages. No attempt was made to set-up special classes or move the residents for treatment. The program was comprised of four sessions per day and consisted primarily of hugging, holding, rocking, and caressing the participants. Contact with the examiner, toys, and peers were all rewarded with similar social contact.

A reversal was implemented as a verification procedure during

the regular Christmas vacation at the institution. Baseline was established after the reversal, and the program was reinstated for a short period.

Data was collected on a daily basis by this researcher who tallied and graphed individual charts.

Results and Conclusions

Positive results were observed for all twelve participants regardless of age, length of institutionalization, or physical handicap. Ages ranged from 4-0 to 26-1 years and lengths of institutionalization ranged from 4.1 to 96.7% of life span. Handicaps of the participants included varying types and degrees of cerebral palsy, blindness, microcephaly, and other disorders.

All the participants responded to the examiner with varying degrees of strength during the baseline period. During the program period, all showed significant improvement. Only four of the participants responded to toys during the baseline period, and after the program period, all participants were responding to varying degrees. During the baseline period, only two participants responded to a peer, but after the program period, all participants were responding in some manner to peers.

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CHAPTER I

INTRODUCTION

Zigler (1973) stated that the personality development of retarded individuals should not be viewed differently than the development of persons having normal intelligence. Accepting this point of view, one can then concentrate on the socialization processes which affect the emotional and motivational factors which are a part of the personality structure. The educator, then, may view the retarded individual's personality development and response to the environment as being similar to that of normal individuals.

The effects of mental retardation and the effects of environmental factors, such as social or interactive deprivation as a result of institutionalization, may be separated. Building a socialization curriculum to help motivate the retarded individual may enable the individual to use his intellectual capacities to a realistic extent.

Purpose

The purpose of this thesis was to examine the effectiveness of a particular educational approach with a group of institutionalized profoundly retarded crib-bound individuals. The approach selected for this study was a modification of "intensive play" as developed by the team of Bradtke, Kirkpatrick, and Rosenblatt (1972). Specific attention was given to providing a working program which could be carried out with a minimum of institutional change. The study investigated the following behaviors: (1) appropriate response towards adults, (2) ability to

initiate appropriate activities during crib time, and (3) appropriate response towards peers.

Definition of Terms

For the purpose of this study it was necessary to define various terms used. Profoundly mentally retarded was defined as the degree of mental retardation, when tested, which falls at least five standard deviations below the norm of intelligence. These individuals often require total maintenance care and many times exhibit additional handicaps (Grossman, 1973). Intensive play, concisely stated, was the kind of physical play occurring between a parent and infant, developed for use in institutions, and coupled with music. A complete definition is outlined in the review of literature. Institutionalized denoted individuals who have been committed to an institution through either voluntary or court procedures. Crib-bound indicated the individual's inability to ambulate alone, either by walking or artificial means (wheelchair, walker, etc.).

CHAPTER II

REVIEW OF RELATED LITERATURE

Providing an educational environment for the profoundly retarded, crib-bound child within an institutional situation has occurred infrequently, and written results of such programs are not readily available. The Educational Resources Information Center (ERIC), as of October 18, 1974, listed only twenty-two references using custodial mentally handicapped (the descriptor which includes the profoundly retarded) as a primary descriptor and the same number as a secondary descriptor. However, various areas of institutional care and programming have been examined.

Institutional Care

Bijou and Baer (1965) studied the establishment of affection in institutionalized children. The authors concluded that attention and affection, as social reinforcers, are established separately. Children in institutions, like children in normal homes, are reinforced by the nearness and attention of adults. Generally children will exhibit those behaviors which will bring adult attention to them. In an institution, many times undesirable and delinquent behaviors will attract the attention of adults and bring them near. Few institutions will ignore such behaviors. Since attendants in institutions are generally overworked and institutions are understaffed, appropriate or good behavior goes unnoticed. Attention, then, is given on a more frequent basis for inappropriate behavior. Bijou and Baer also con-

clude that when children received attention under these circumstances, their behavior could not be termed affectionate. Because of this, affection may not be established as a social reinforcer.

Even though this observation by Bijou and Baer described institutions during the sixties, a later report (McGavern, Cleland, and Swartz, 1974) concluded that personnel conditions in institutions for the profoundly retarded have changed minimally. They stated that wards for the profoundly retarded, in most publically supported institutions, are located away from the greatest number of professional staff and visitors.

Care for the profoundly retarded has become an ever increasing need since the number of profoundly retarded residents has increased. Swartz, Cleland, and Altman (1971) reported two studies concerning the institutionalization of the profoundly retarded. The first study stated that over one-half of the institutionalized population of retarded individuals is considered severely or profoundly retarded. The second indicated that half of the individuals classified as profoundly retarded in the United States are institutionalized. Similarily, the Los Lunas Hospital and Training School, Los Lunas, New Mexico statistics showed that 56% of the total 1974 population was profoundly retarded (A Handbook About Los Lunas Hospital and Training School, 1974).

Maternal Attentiveness (Response to Adults)

The effects of institutionalization as described by Bijou and Baer (1965) have also been examined by Zigler (1973). He concluded that institutionalized individuals, because of their social deprivation, exhibit higher motivation to interact with adults. At the same time,

since many experiences with adults are negative, they become wary of adults. The following investigators also have examined the effects of this wariness which results from the absence or lack of adults on the development of institutionalized individuals.

White and Castle (1964) investigated institutional children and found that by giving them twenty minutes of extra handling per day, the children significantly improved their ability to visually attend to the environment. Wright (1971) stated that a variety of studies have demonstrated that mother and infant interaction appears to effect the child's total development, including social, intellectual, and physical development. Two of these studies are especially relevant. A study by Rubenstein, as reported by Wright, concluded that early stimulation, in the form of maternal attentiveness, is capable of helping to develop exploratory behavior. In the same year, White, in another study recorded by Wright, showed that environmental modifications for institutionally reared children such as increased handling, motility, and enriched visual surroundings, could affect their acquisition of visual-motor skills.

According to Millar (1971), institutionalized children play less than non-institutionalized children. Also, play by institutionalized children is marked by immaturity, stereotyping, and uninventiveness. Conditions which contribute to this include the lack of a mother figure, toys, the opportunity to be socially or intellectually stimulated, and opportunity to become attached to a dominant individual.

Mothering or maternal attentiveness is exceptionally important for the young child. Yarrow (1961), investigating the mothering effect, found the mother to be the mediator of the infant's sensory environment.

She provides the infant with tactile, visual, and auditory stimulation. She is also able to raise and lower the intensity of these environmental stimuli. Therefore, Yarrow concluded that in the mother's absence the infant may be socially and environmentally deprived.

Concerning sensory deprivation, Schiefelbusch (1967) noted that the degrees of developmental retardation found in institutionalized individuals usually correlated with the degrees of mental retardation. Therefore, the greater the degree of mental retardation, the greater will be the amount of developmental retardation. The extent of sensory deprivation of the profoundly retarded crib-bound child, then, would be among the highest. The following two studies have examined the problems associated with crib confinement.

In one study, Kirk, Karnes, and Kirk (1968) reminded the reader to remember that the inactive child, the one who lies in a prone position in a crib, would not have the same stimulus for development as does the child who is carried and held. The second study, by Cass (1973), concluded that even if the retarded child is able to look out of his crib, the child is always apart from people and environmental objects.

Environmental Attentiveness (Crib Activities)

Maternal handling or playing is the initial form of play for the child, after he experiences himself. As he grows to enjoy the mother relationship, he will gradually contact new experiences in his environment. This maternal handling is the basis for toy play. According to Piers (1972), even before a child plays with toys he experiences his own power over the environment. Erickson (1963) stated that initial play for the child consists of vocalizations, sensual perceptions, and

kinesthetic sensations. Later, the child will play with persons and things which are available in his environment.

According to the above descriptions, play is interrupted for the institutionalized child. Most institutional environments are similar to the description by Warren and Burns (1970). The walls of institutions are usually covered with pictures, none of which the children can touch and which few can see in perspective. Dolls and toys, if present, are fastened to walls or locked in cabinets. Because of this, the play sequence is broken. To help change this situation, Warren and Burns suggested that pictures should be lowered to eye level and that toys be placed on the floors and in the cribs where they can be manipulated.

In agreement with Warren and Burns, Caplan and Caplan (1973) noted that children cannot realize what objects truly are until they can combine their visual and auditory impressions with their tactile and kinesthetic impressions. This can only be done through touching and manipulating objects.

But, for the play sequence to continue, touching toys is not enough. Caplan and Caplan also stated that many child psychologists feel that babies need a chance to effect their environment. To accomplish this change, cause-and-effect toys are essential. Skinner (1968) also stated that children will play for hours with things which produce significant changes in their environments. Zigler (1973) said that the need to be effective is inherent and central to human beings.

This ability to effect the environment, though, is another area of disrupted development for the institutional child because his efforts in play, for the reasons stated by Bijou and Baer (1965), are infrequently rewarded. The institutional child's toys have little cause-

and-effect power, and therefore, very rarely produce significant change in his environment.

Peer Attentiveness (Response to Peers)

If a child's play is to extend to other children in a satisfactory manner, opportunities need to be available. The maternal relationship establishes a basis of expectation on the part of the child. Cass (1973) stated that if a child is loved, cared for, and stimulated he will expect the outside world to also be as inviting and friendly. Therefore, the first contact with peers is colored by the family relationship, or lack of relationship.

Home Opportunities

In contrast to institutional care, the child living at home has innumerable experiences which allow for impromptu handling. Gesell and Ilg (1946) stated that this handling provides an opportunity for positive affection to enter the child's world in the form of such emotional expressions as smiles, kisses, and hugs. The child at home throughout his infancy receives these various kinds of nursery type affections which are directed to all his senses. The home of the normal child provides a situation where the infant's needs are expressed and met. These needs, emotional in nature, include love, affection, and belonging.

This impromptu handling in the home, in the form of child and parent contact, provides the stroking which Harris (1969) stated is essential to the child's survival. The absence of this repetitious body contact will cause the child to die psychologically, or perhaps physically. Harris further explained that at birth the infant is separated from his mother, but later he is in the arms of a human being

who warms him, supports him, holds him, and begins to stroke him. Harris calls this contact the child's psychological birth. Human contact provides the child with the knowledge that life is good while reinstating him with human closeness. The outcome is that the child's will to live is initiated.

Institutional Change (Intensive Play)

Moving from a mothering or human closeness relationship to playing with toys and peers is a progression to which traditional institutional children are not exposed. Cass (1973) found that children in institutions, because they cannot find play satisfying, have difficulty in developing the normal capabilities of childhood. Because of this lack of development, children may withdraw from their world where contacts with adults and peers are, at best, difficult. The children withdraw and begin activities such as rocking, headbanging, sucking, etc. Caplan and Caplan (1973) stated that children will withdraw from play and people when they are unable to affect their world or if their needs are not met.

Millar (1971) asked if a change does occur in this withdrawl producing environment, would a change in development occur. She referred to a 1962 study which compared infants in institutions to infants in their own homes. The study showed the greatest differences in the areas of language development and social skills, and the least amount of difference in motor development. The study showed that infants in institutions mouth less, explore less, play less, and show little preference for toys. But, children subsequently placed in foster homes showed great improvement. Millar concluded that positive subse-

quent care after social and intellectual deprivation, as in institutions, can succeed. Harris (1964) also stated that whatever a child's psychological position may be, it can be altered.

A suitable method of positive care within the institution is teaching the rewarding effects of affection by preparing for and providing play activities. Caplan and Caplan (1973) noted that play alone can afford a child freedom, control, and mastery. Play is a child's way of life, and it is natural for a child to grow and use his abilities through play.

In 1972 the team of Bradtke, Kirkpatrick, and Rosenblatt developed a technique called "intensive play" which is outlined as "the building through close body contact and physical stimulation, of positive responses to normally pleasurable experiences. The child's body language... provide (sic) the clues for the rate of adult imposition" (p. 9). Intensive play is coupled with music which provides a basis for rocking, holding, stroking, bouncing, etc., when playing with the child. Music allows a pace for the play, but the adult must always be aware of the child's body language, allowing for meaningfulness and appropriateness.

Intensive play is the simplest kind of play with children. It is the kind of play, many times unnoticed by parents of normal children, which involves tickling, hugging, cuddling, holding, and caressing. This kind of play is done without toys or other apparatus, relying only on imagination, a child, and an adult. Intensive play is carried out on mats on the floor, usually in a one-on-one situation, where the child can sit on the lap of the adult or beside him. The play can take

place as part of the daily classroom schedule or during a separate specified time of the day.

CHAPTER III

METHOD

Los Lunas Hospital and Training School, Los Lunas, New Mexico is a residential center for mentally retarded individuals. Care for the residents ranges from custodial or hospital care for profoundly retarded crib-bound individuals to educational and vocational opportunities for ambulatory mildly retarded residents. The opportunities and care provided in the program for this thesis were carried out within the structure of the institution with a minimum of change.

Subjects

The experimental group consisted of twelve crib-bound residents of Los Lunas Hospital and Training School. The residents were selected by the examiner within the confines of the following criteria. First, equal numbers of males and females (six males, six females) were selected from the cottages housing the institution's crib-bound residents. Second, only residents who were involved in limited or no other programs were selected. Third, residents were selected to represent a broad range of lengths of institutionalization, chronological ages, past measures of ability (if any) and physical handicaps or limitations (Tables 1 and 2).

The subjects ranged in age from 62 to 313 months and their lengths of institutionalization ranged from 2 to 132 months. The mean percent of institutionalization compared with chronological age was 39.9%. All of the subjects exhibited varying degrees of physical

Table 1

Chronological Age and Institutionalization Percentages of the Members of the Experimental Group*

Classmates		Chronological Age (years-months)	Length of Institutionalization (years-months)	Institutionalization
1	Anthony	5-2	0-9	14.5%
	Ronda	4-5	0-11	20.7%
	James	3-9	1-2	31.1%
2	Teckla	16-3	1-11	11.8%
	Lucinda	9-5	0-11	9.7%
	Billy	10-4	10-0	96.7%
3	Carol	17-9	10-8	60.0%
	Kathy	13-3	6-8	50.3%
	Krystal	13-1	9-6	72.6%
4	Brian	16-2	10-6	64.9%
	Leo	26-1	11-0	42.1%
	Greg	4-0	0-2	4.1%

*calculated from beginning of project

Table 2

Participants Ranked According to Age

and Length of Institutionalization

Chronological Age		Length of Institutionalization	
James	3-9	Greg	4.1%
Greg	4-0	Lucinda	9.7%
Ronda	4-5	Teckla	11.8%
Anthony	5-2	Anthony	14.5%
Lucinda	9-5	Ronda	20.7%
Billy	10-4	James	31.1%
Krystal	13-1	Leo	42.1%
Kathy	13-3	Kathy	50.3%
Brian	16-2	Carol	60.0%
Teckla	16-3	Brian	64.9%
Carol	17-9	Krystal	72.6%
Leo	26-1	Billy	96.7%

(years-months)

handicaps. These conditions included cerebral palsy, microcephaly, congenital heart defects, blindness, and epileptic seizures.

All of the subjects showed varying degrees of withdrawal from adults, and few touched or manipulated toys when they were placed in the participants' cribs. None of the subjects were involved in educational programs. One was treated by a corrective therapist twice a week, and another was visited on an infrequent basis by the therapist.

Target Behaviors

Because of their varying degrees of withdrawal, limited exposure to adults, and crib confinement, three specific objectives were selected for all individuals. The behaviors - appropriate response towards adults, ability to initiate appropriate activities during crib time, and appropriate response towards peers - were adapted for each participant. The basic behaviors are as follows:

1. When an adult's outreached hand is near the subject's hand, the subject will grasp the adult's hand. The individual adaptation of this objective was the participant placing his/her hand in the adult's hand. This applied to three subjects because of their inabilities to grasp.
2. When the subject is in his/her crib, he/she will touch a ball near his/her hand. The individual adaptation concerned the selection of the toy, which varied between a ball and a musical toy. The adaptation also included the location of the placement of the toy in the crib (suspended, attached to the side, or freely placed in the crib). Each placement depended upon the amount of mobility of the subjects.

3. When in close proximity to another child, either lying on a mat or in the same crib, the subject will reach out and touch the nearby participant. All of the subjects met the same criteria for this behavior.

Intervention Procedures

The intervention was introduced in the cottages to which the residents were assigned. Children were selected from three cottages, and each cottage had unique schedules. Some subjects spent their entire day in their cribs. Others were placed on mats on the floor for part of the day, and others spent their day on the floor of a dayroom. The individuals were not removed from these areas when they were participating in the program. The usual institutional routine was preserved.

The principal intervention for all of the behavior goals was a modification of the techniques of intensive play. Music was not used, and toys were added for building positive responses to the environment. Also, an emphasis was placed on building responsiveness to peers.

The intervention for each behavior was similar, but each was built upon the last. BKR techniques such as holding, hugging, rocking, cuddling, and playing were the basis for the first behavior which is building appropriate responses towards adults. This was expanded for the second behavior by including toys selected for each participant. The selection of toys was based upon the physical handicaps of each individual and the preferences shown by them in informal situations. For the third behavior, the play techniques and toys were utilized to build interpersonal relationships among the residents of each class. Activities such as pushing toys back and forth and rewarding members for

contact with each other were used to stimulate peer awareness.

Class sessions were held in each cottage for one hour per day, five days a week with three residents involved in each class session. Members of each cottage composed the classes. Six of the participants were from the same cottage, and this group was split into two classes.

Measurement

Baseline data was gathered on each resident's behaviors. The following procedures were used. For behavior one, response towards adults, baseline was collected at the crib of each subject, or where the individual spent the greatest part of the day. Baseline was collected in four minute periods divided into ten second intervals. Behaviors were recorded as being present or not present at the end of each interval and were collected for thirteen days, day one through thirteen of the experiment. The data was collected previous to each class session of both the baseline and treatment periods. The treatment period lasted from day fourteen through day fifty-one of the experiment (38 days).

Baseline data was collected for crib-time activities beginning on the 21st day of the experiment. This data was also collected at the crib of each subject or where the individual spent his day. Baseline was collected in four minute periods, divided into ten second intervals, and recorded at the end of each interval. Data was collected for seven days, not all consecutively. The data was collected previous to each class session of both the baseline and treatment periods. The treatment continued for eighteen days (day 29 through 51) and paralleled the treatment for behavior one.

Baseline collection for response to peers began on day 34 of the

experiment. The baseline and treatment data collection for this behavior was the only institutional structure change. All three class members were placed on the same mat on the floor where their interaction behaviors were observed. Observations were made in four minute periods divided into ten second intervals and recorded at the end of each interval. Behaviors were recorded as being present or not present for eight consecutive school days and previous to each class session. The treatment period continued for ten days beginning on the 42nd day.

Specific behavior conditions and exceptions were adopted for consistency and objectivity. These behavior conditions included not counting movements which appeared to be spastic or accidental. If the individuals exhibited cerebral palsy to some degree, movements towards the examiner's hand, toys, and peers had to be in the reverse direction of the individual's usual uncontrolled movement, or these movements were not counted. Reflex grasp was not considered as meaningful grasp. Grasp had to appear to be intentional and controlled.

Design

Baseline data and intervention for the first behavior were instituted first. Later, procedures for behavior two were initiated, and finally, for behavior three. At the end of the twenty-eighth day of treatment for behavior one, of the eighteenth day of treatment for behavior two, and of the tenth day for behavior three, a reversal was introduced. The reversal occurred during the Christmas vacation of the school schedule and therefore did not change the institutional routine. The reversal consisted of sixteen days during which the participants were not exposed to the class sessions. After this time, a baseline was

reestablished with five days of observation for each of the behaviors. Following this, the program was reinstated for seven consecutive school days.

Data Analysis

The method of data analysis began with visual observation of the behavior for the various responses. These responses were recorded and tallied, and the results were placed on individual graphs for each participant. All observations and recordings were made by the examiner.

The purpose of this thesis was to examine the effectiveness of a modified intensive play program. Effectiveness was considered on an individual and group basis. Since the participants in the program varied widely in their length of institutionalization, chronological age, degree and kind of physical handicaps, and type of care, graphing was selected as the most appropriate method of data analysis. (See Graphs 1 through 12.)

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this study was to examine the effectiveness of a modified intensive play program in building appropriate environmental responsiveness in a group of crib-bound profoundly retarded institutionalized individuals. Behaviors specifically observed were (1) the individuals' responses towards adults, (2) the individuals' ability to initiate crib-time activities, and (3) their responses toward their peers. The results, as recorded in Graphs 1 through 12, show that positive results were obtained for all twelve participants in relation to each of the three behaviors. Each behavior area results are presented separately and in relation to the specific handicaps of the subjects.

Response to Adults

A visual representation of the interaction between examiner and institution residents can be seen in Graphs 1 through 12. The vertical scale represents the number of behaviors observed and recorded at the end of each ten second interval during a four minute period. The horizontal scale depicts the days of the program throughout $baseline_1$, $program_1$, reversal, $baseline_2$, and $program_2$.

All of the subjects, as seen in the baseline section of the graphs, responded to the examiner to varying degrees. Kathy (Graph 8) responded the least, yet neither her length of institutionalization nor her physical handicaps were exceptional in relation to the other subjects. The highest baselines were recorded for James, Anthony, and

Billy (Graphs 1, 4, and 6). Their lengths of institutionalization and physical handicaps were quite diverse. James' and Anthony's lengths of institutionalization were shorter than many of the subjects. They both exhibited severe degrees of cerebral palsy, one flaccid and the other spastic. In contrast, Billy's principal physical handicap was his blindness, and his length of institutionalization was the highest of all the participants. Anthony, James, and Billy were within the youngest half of the group, while Kathy was within the older half of the group.

As the program phase of the study was instituted, only three subjects - James, Ronda, and Carol - showed a sharp increase over their baseline levels in response to the play intervention (Graphs 1, 3, and 11). Two of these individuals, James and Ronda, were among the youngest of the subjects. Also, their lengths/percents of institutionalization were among the lowest. Only two of the participants, Kathy and Carol, did not reflect the general trend of continual improvement (Graphs 8 and 11). Both were within the oldest half of the participants and among the upper half of participants in relation to length of institutionalization. Of special interest is that the most mobile of the subjects, his only handicap being blindness, was Billy. His progress, as recorded in Graph 6, was similar to the other participants, excluding Kathy and Carol.

During the reversal phase, all of the participants remained in the institution except one. Anthony (Graph 4) spent five of the thirteen days at home, but this apparently did not affect his $baseline_2$ levels recorded after the reversal period. All of the $baseline_2$ levels of the participants were as low, or lower, than the $baseline_1$ levels. Krystal's $baseline_2$ level (Graph 7), though, was lower than the others

in relation to baseline$_1$ levels. During this phase, Krystal was extremely limited in her response to the examiner.

The program$_2$ phase for this behavior resulted in sharp increases in response levels of most of the participants. Lucinda, Kathy, and Carol (Graphs 5, 8, and 11) were the only exceptions. Their improvement appeared to be quite gradual or limited. Their backgrounds were widely varied. Kathy and Carol were among the oldest residents and had longer lengths of institutionalization. Lucinda, in contrast, was one of the youngest participants and was among those who were institutionalized the least amount of time. Their physical handicaps were similar, all exhibiting severe degrees of spastic cerebral palsy.

Response to Toys

Standards for graphing the subject's response towards environmental objects (toys) were the same as those for graphing responses towards adults. Also, these graphs represent the same time intervals as those for the first behavior.

Only four of the twelve participants touched toys placed near them during the baseline period. One of these four participants, Greg, showed only minimal response to toys, while the other three subjects showed inconsistent yet comparatively stronger responses. All four of these individuals - James, Greg, Anthony, and Teckla - were similar in many respects (Graphs 1, 2, 4, and 10). James, Greg, and Anthony were among the youngest members participating in the program. Teckla, the exception, was among the oldest. James, Anthony, and Teckla all exhibited severe signs of spastic cerebral palsy. Greg, handicapped by the absence of most of his fingers and feet, was unlike the others. All

of these individuals were within the lower range of length of institutionalization.

As the program phase was instituted, all the participants' responses rapidly increased within the first five days, with only one exception. Kathy's response by only touching a toy once in five days was limited, though she was at neither extreme in relation to age, length of institutionalization, or physical handicap (Graph 8).

Lucinda's and Leo's responses, though lower than the other members' responses, were significantly higher than their baseline levels (Graph 5 and 12). Leo and Lucinda differed widely in age, length of institutionalization, and physical handicap.

The other members responded in a strong consistent manner. The results of all twelve participants seem to reflect a sharp rise from baseline, a long period of fluctuating yet strong response to toys, and then a slight decline before the reversal phase.

The reversal phase, coinciding with the reversal for the first behavior, was carried out in accordance with the school scheduled Christmas vacation. This phase lasted thirteen days.

$Baseline_2$ levels were consistently higher than $baseline_1$ levels, with one exception. Kathy's $baseline_2$ level (Graph 8) was the same as her $baseline_1$ level, reflecting no response to toys.

Responses during the $program_2$ period reflected the same intensity of responses which were recorded during the $program_1$ phase. Kathy, again, showed the least improvement during this time, but the other members showed a quick, strong rise in response to toys in this phase.

Response to Peers

Periods of observation for response to peers were the same as for the first two behaviors and were recorded in a similar manner. During this phase, data was collected only on eleven subjects. Greg, hospitalized throughout most of this time, did not participate in this phase of the project (Graph 2).

James and Anthony (Graphs 1 and 4) were the only participants who responded to a peer during the baseline$_1$ period. Each responded only once in a five day period. The other members simply never touched their peers when in close proximity to them.

Five of the members seemed to respond strongly to their peers during the program period. The other six participants responded in a positive manner but did not reflect the same trend of increase in responses. Those members responding with the greatest strength - James, Anthony, Billy, Brian, and Carol - represent a wide variety of ages and lengths of institutionalization (Graphs 1, 4, 6, 9, and 11). Their physical handicaps were similar.

Of these five, ages ranged from the youngest James who is 3-9 to the second oldest Carol who is 17-9. Lengths of institutionalization ranged from Anthony's 14.5% to the highest which was Billy's 96.7%. Four of the participants exhibited signs of cerebral palsy and one, Billy, was blind.

The program phase for this behavior was the shortest for the three behaviors. This short phase limited the number of times to observe the participants, but, for the most part, response to peers was gradual and limited. Seven of the participants - James, Anthony, Lucinda, Billy, Krystal, Carol, and Leo - reflected a small depression

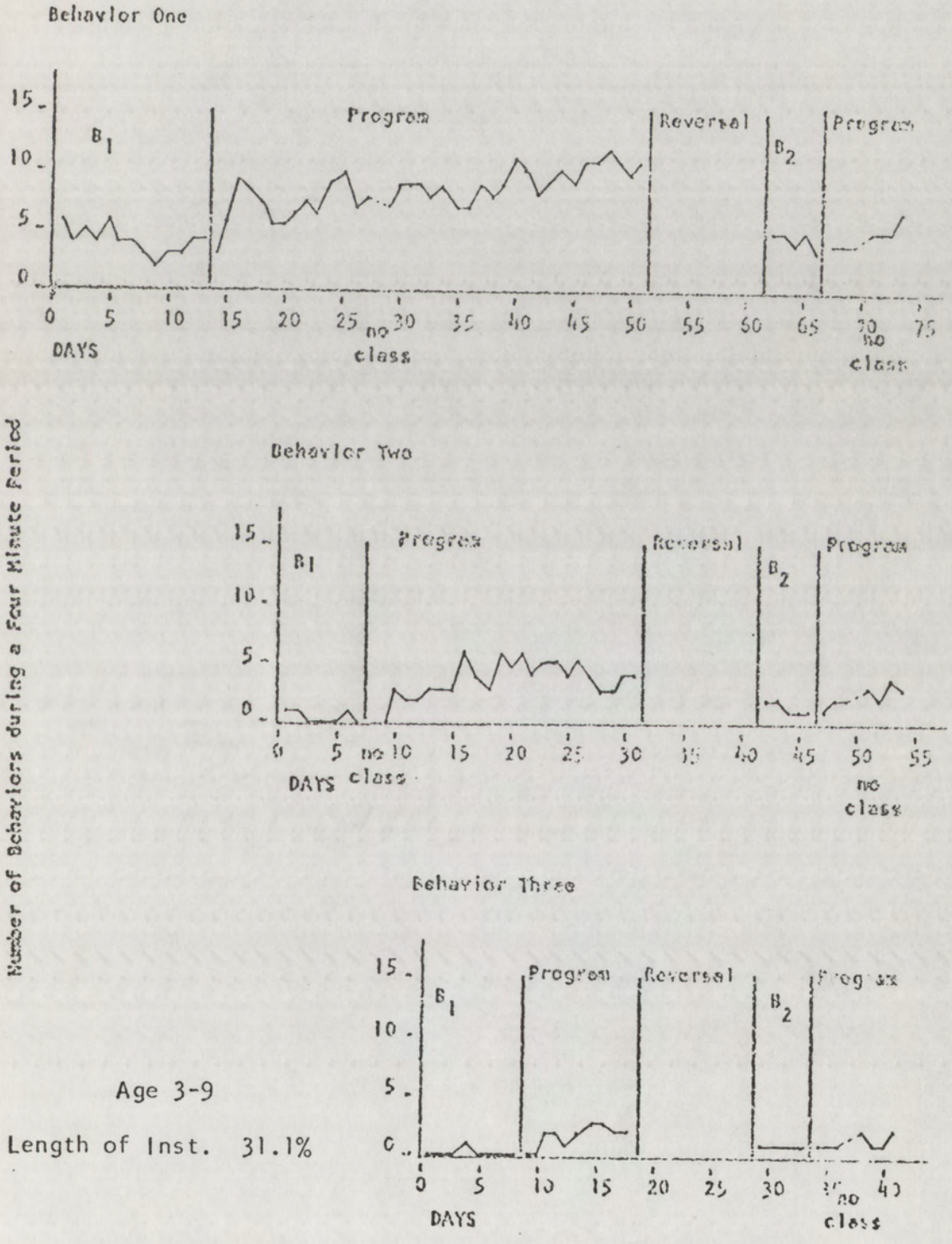
in their responses near the end of the program phase (Graphs 1, 4, 5, 6, 7, 11, and 12). The other four members showed a steady or rising record of responses (Graphs 3, 8, 9, and 10). The reversal phase, similar to the phases for the other two behaviors, was not remarkable.

The $baseline_2$ period results were similar to the $baseline_1$ results for most of the participants. Leo (Graph 12) responded once during this phase, but this singular response did not appear to be reflective of a trend of ability. A definite exception to similarity of $baseline_1$ and $baseline_2$ was apparent with the results of the five individuals who responded strongly during the $program_1$ phase. All of these subjects' responses were significantly higher than their $baseline_1$ levels (Graphs 1, 4, 6, 9, and 11).

During the $program_2$ phase, results were reflective of the strength and weakness of the $program_1$ phase. Those participants whose responses were gradual and limited remained so in both phases. Those who responded strongly in the $program_1$ phase also responded strongly in the $program_2$ phase.

Graph 1

James



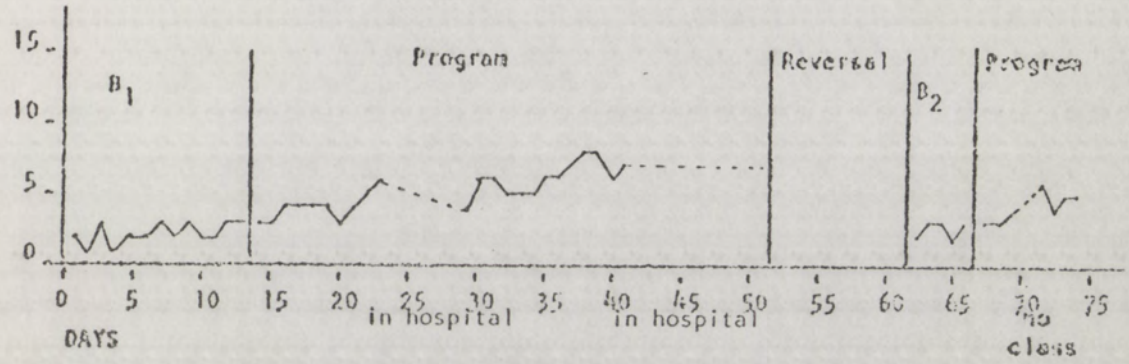
Age 3-9

Length of Inst. 31.1%

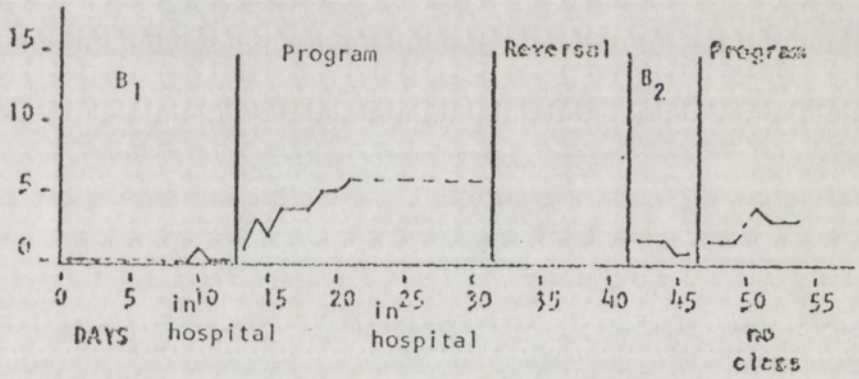
Graph 2

Greg

Behavior One

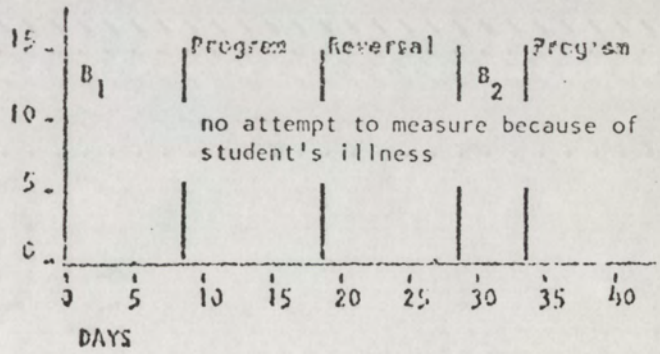


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three



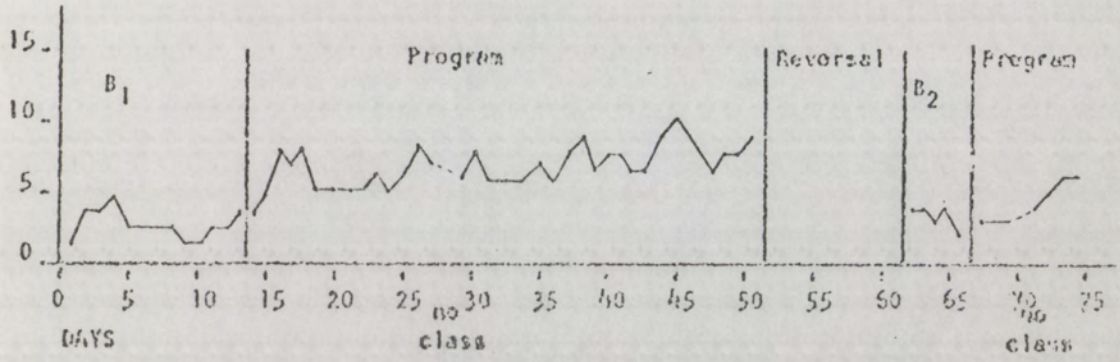
Age 4-0

Length of Inst. 4.1%

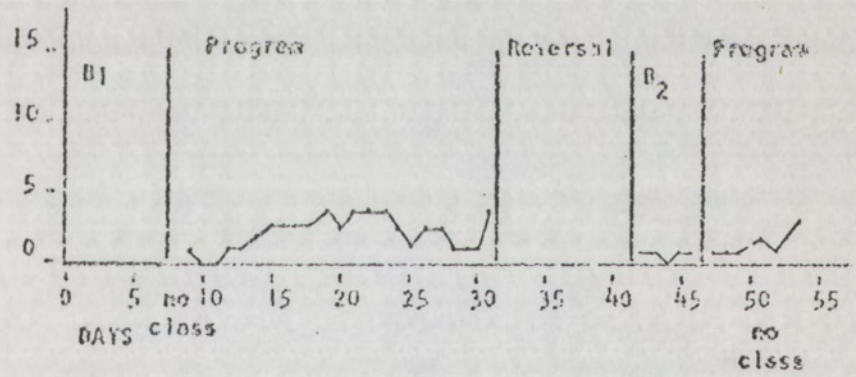
Graph 3

Ronda

Behavior One

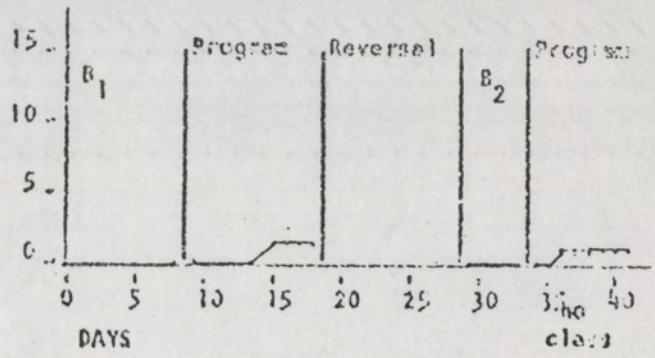


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three

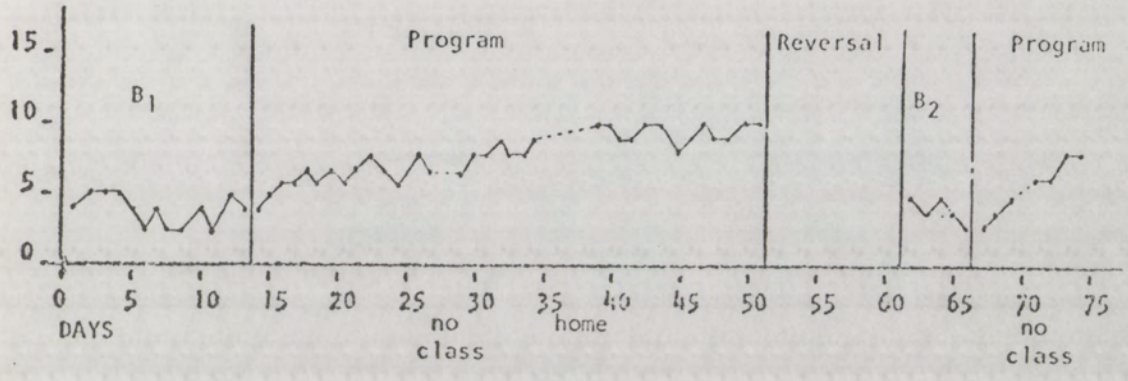


Age 4-5

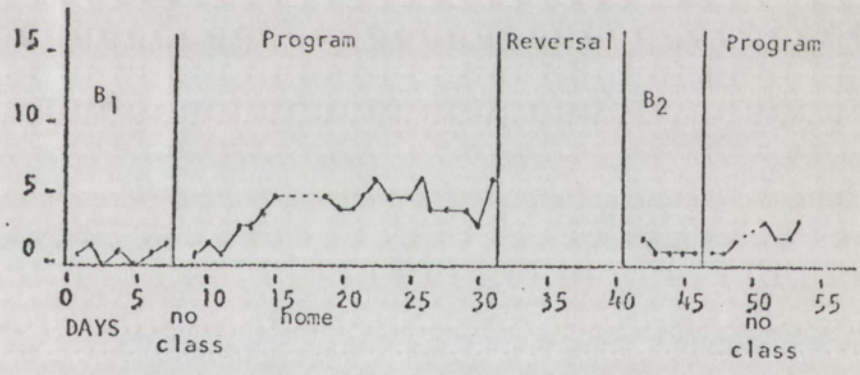
Length of Inst. 20.7%

Graph 4 Anthony

Behavior One

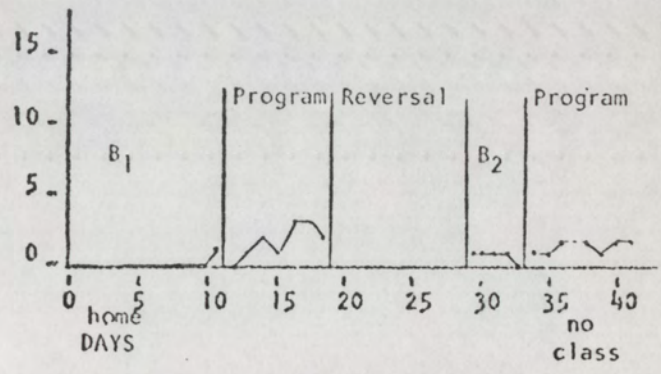


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three



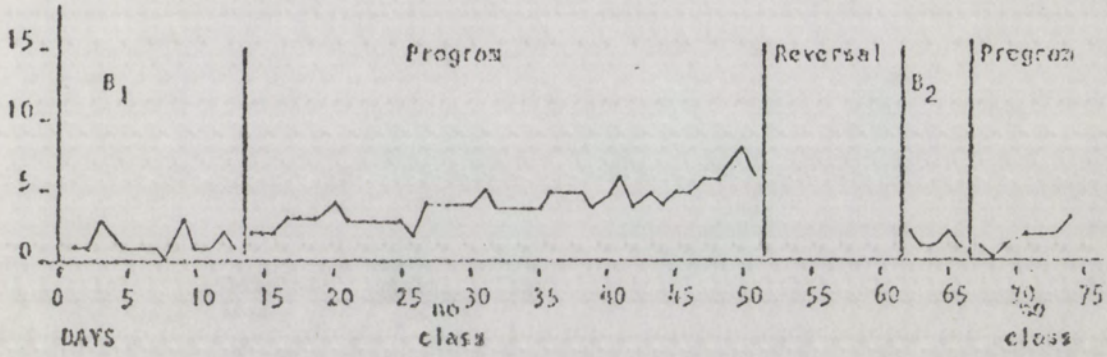
Age 5-2

Length of Inst. 14.5%

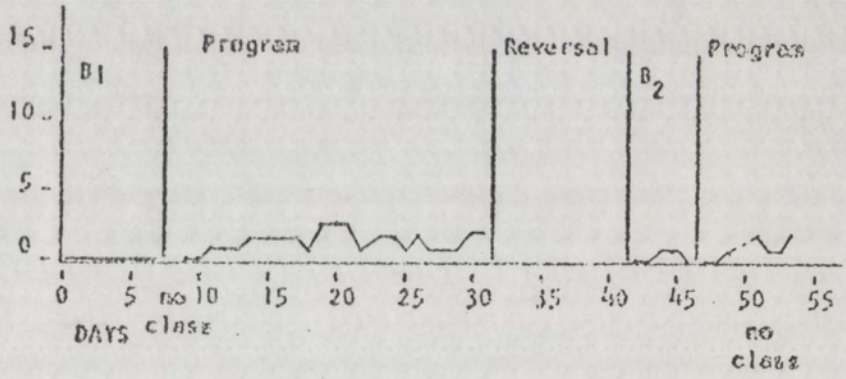
Graph 5

Lucinda

Behavior One

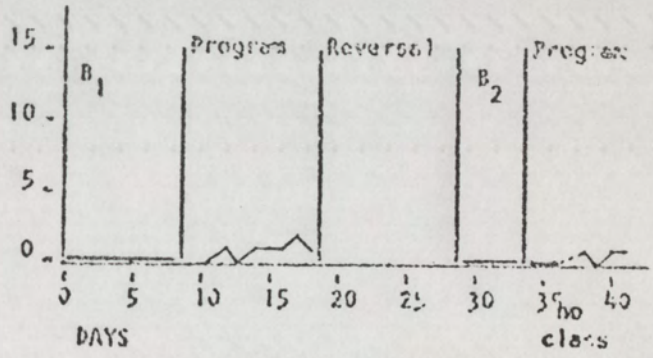


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three



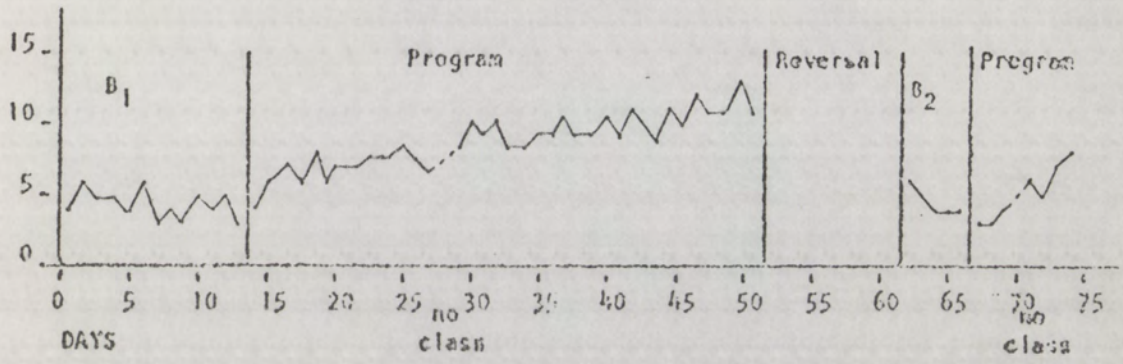
Age 9-5

Length of Inst. 9.7%

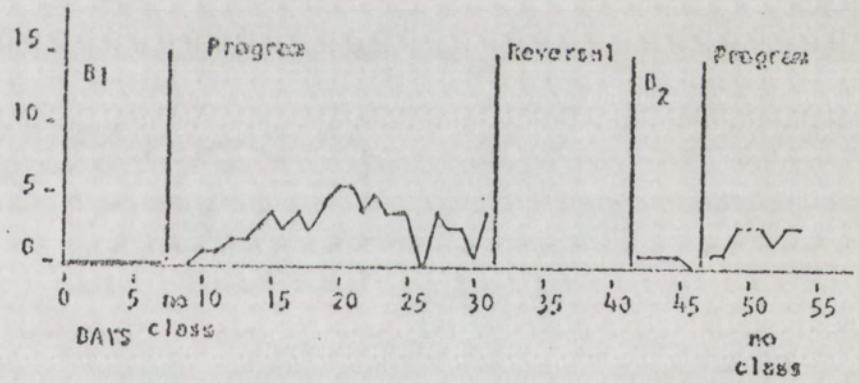
Graph 6

Billy

Behavior One

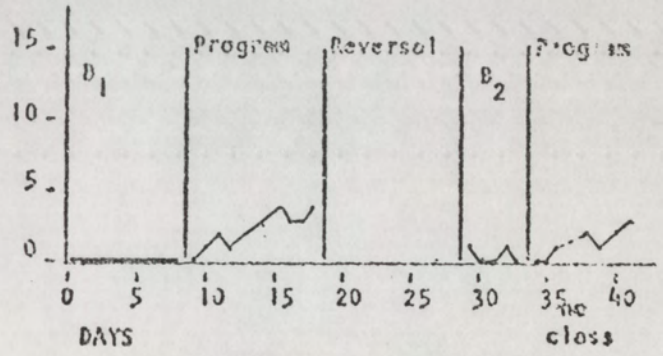


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three



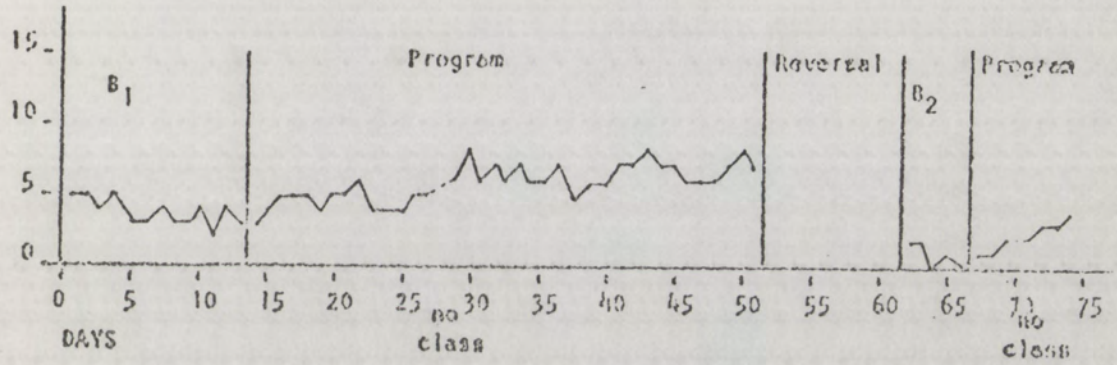
Age 10-4

Length of Inst. 96.7%

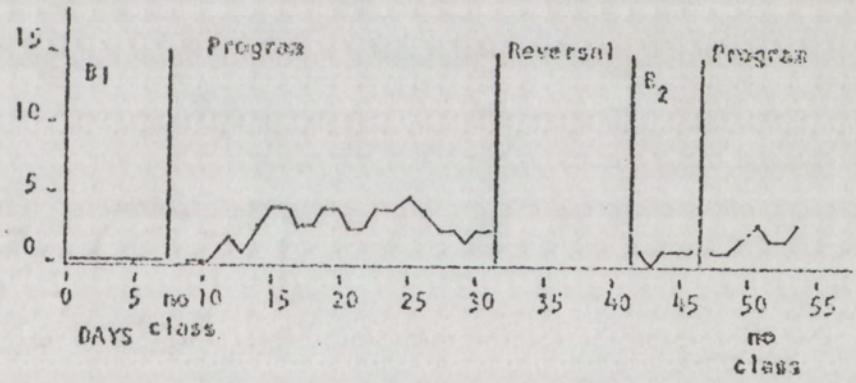
Graph 7

Krystal

Behavior One

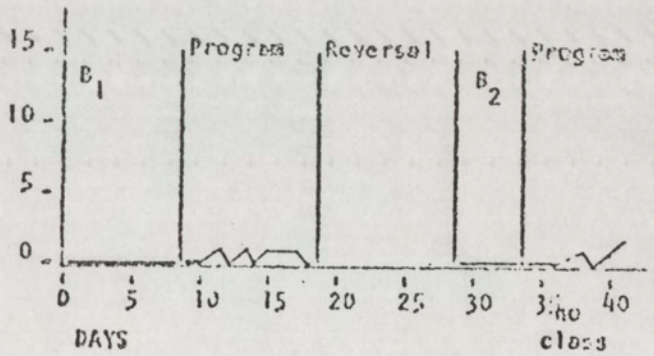


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three

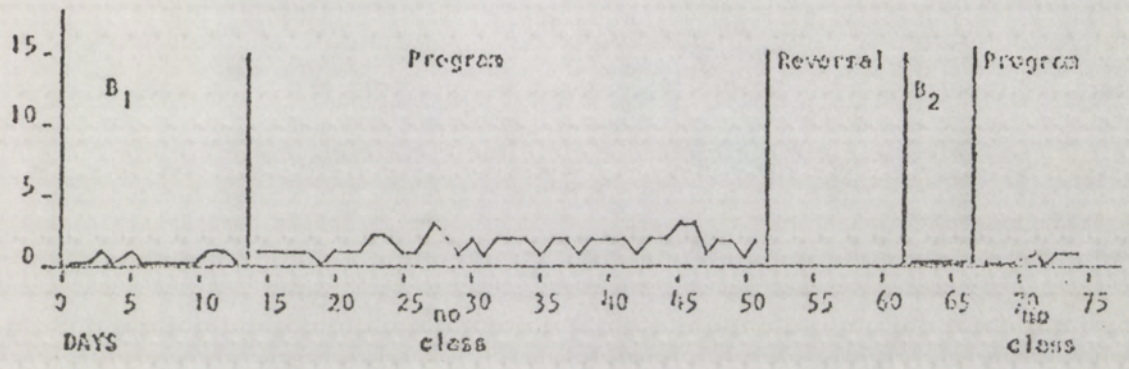


Age 13-1

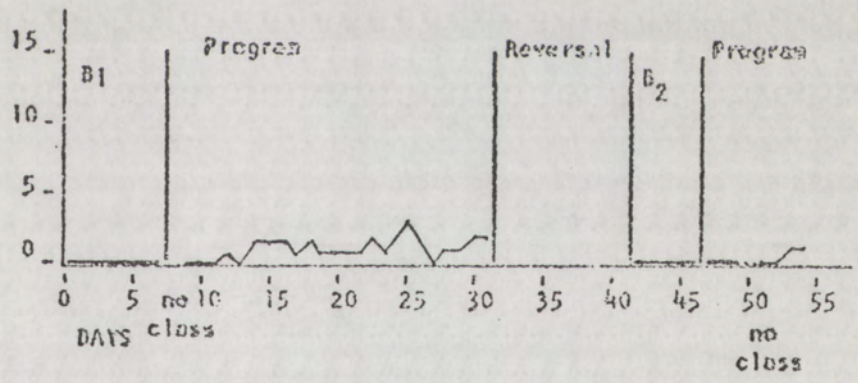
Length of Inst. 72.6%

Graph 8 Kathy

Behavior One

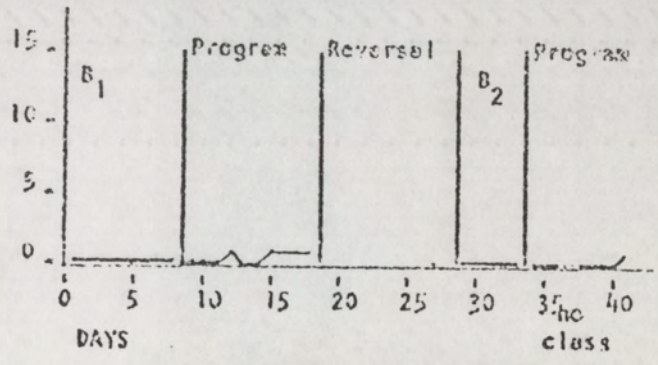


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three



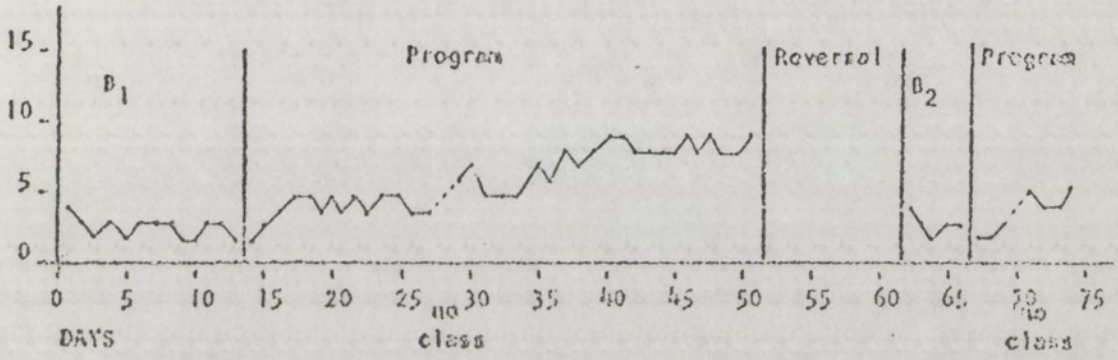
Age 13-3

Length of Inst. 50.3%

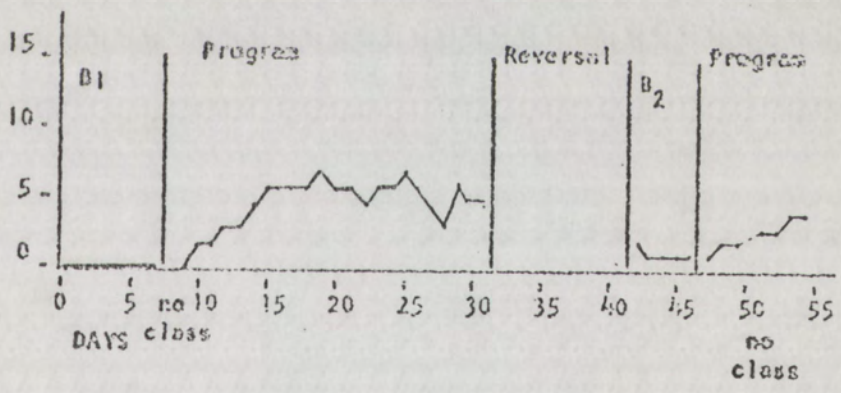
Graph 9

Brian

Behavior One

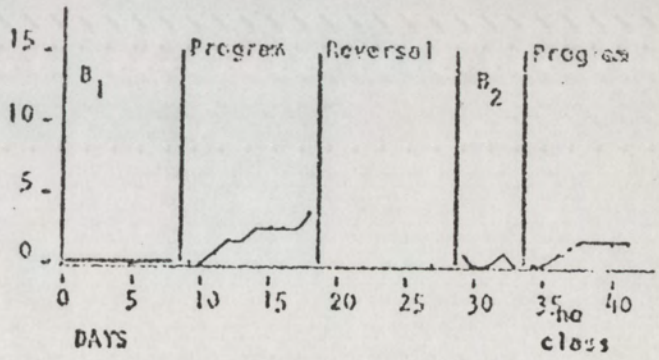


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three



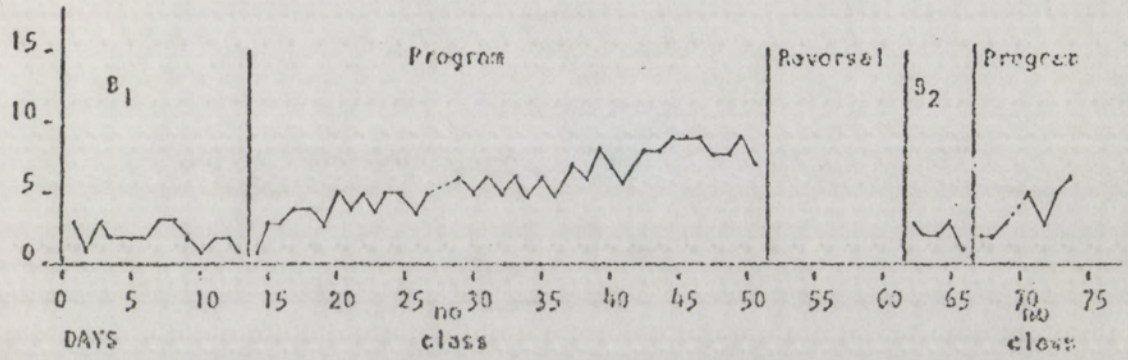
Age 16-2

Length of Inst. 64.9%

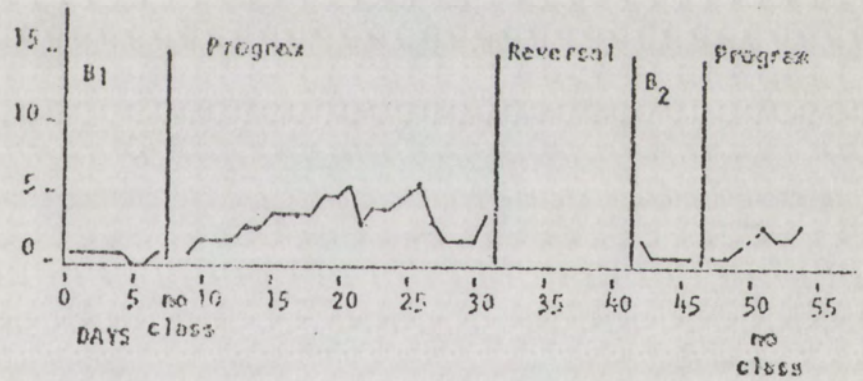
Graph 10

Teckla

Behavior One

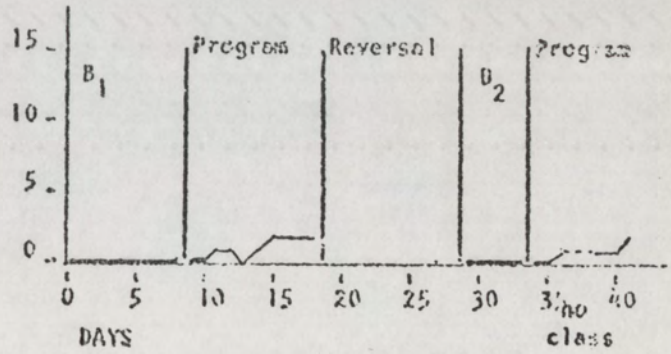


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three

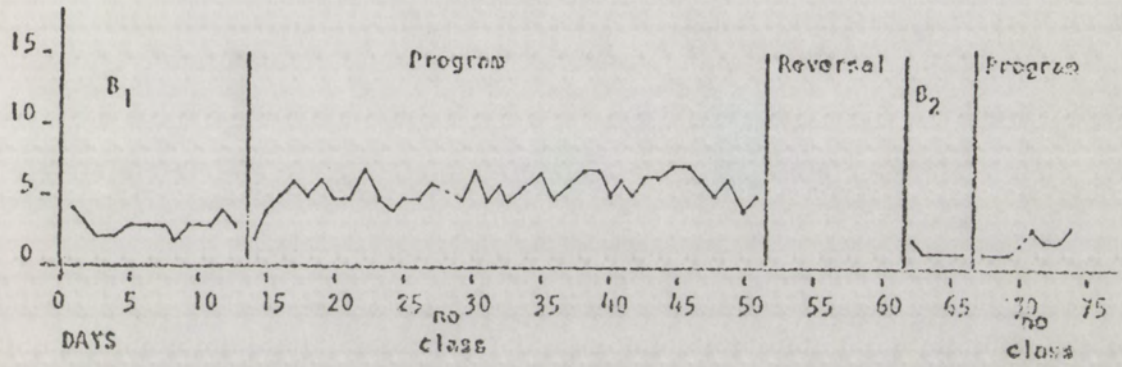


Age 16-3

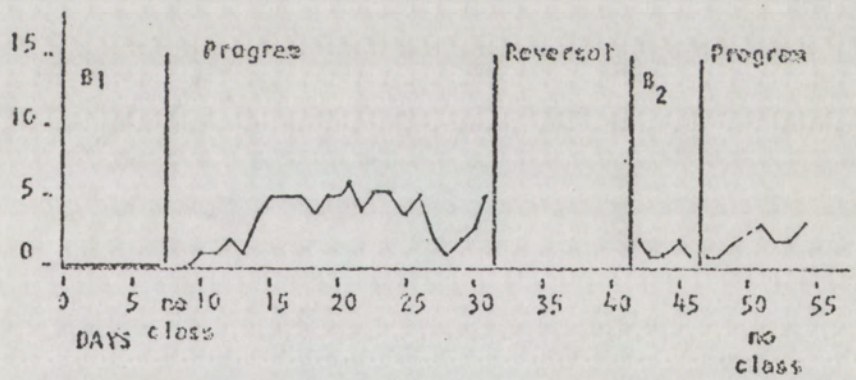
Length of Inst. 11.8%

Graph 11 Carol

Behavior One

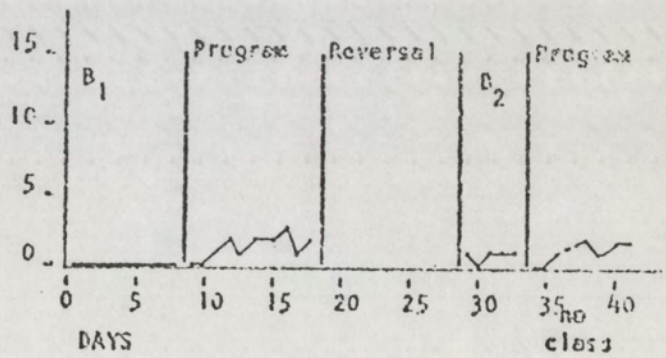


Behavior Two



Number of Behaviors during a Four Minute Period

Behavior Three



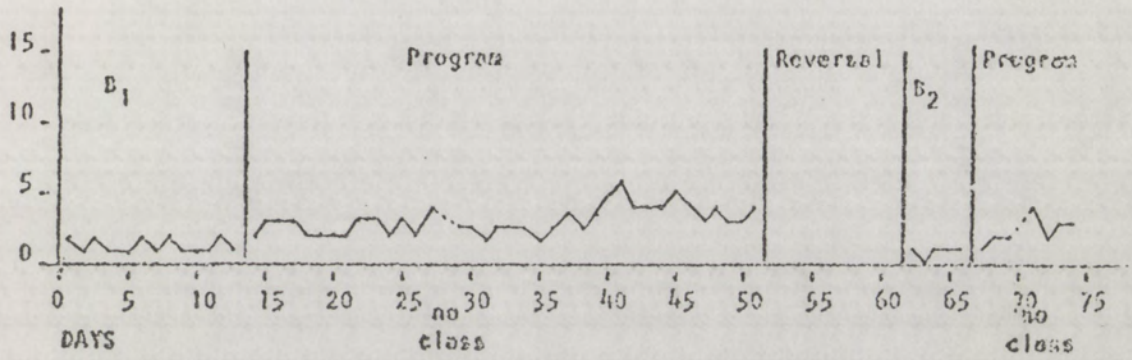
Age 17-9

Length of Inst. 60.0%

Graph 12

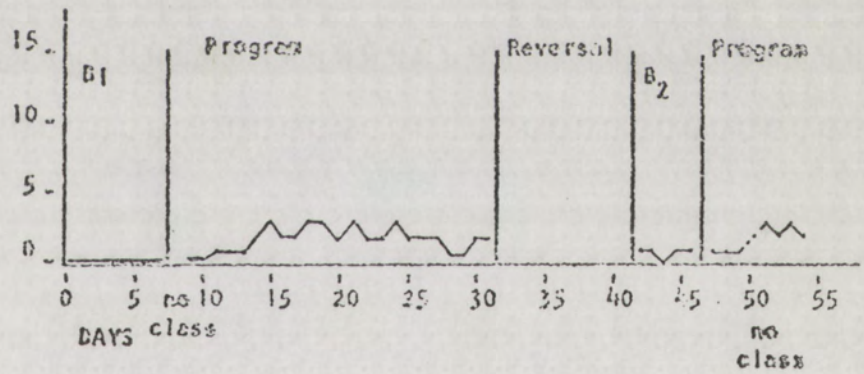
Leo

Behavior One



Number of Behaviors during a Four Minute Period

Behavior Two



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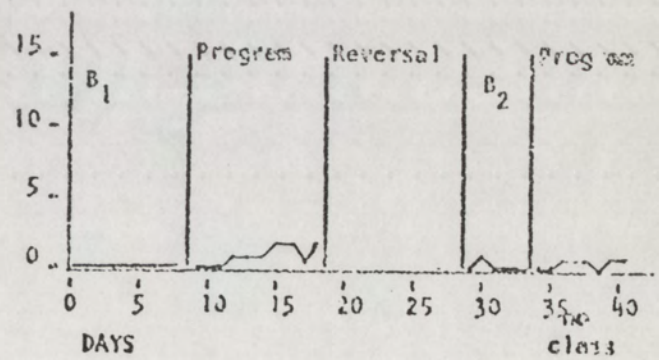

Age 26-1

Length of Inst. 42.1%

CHAPTER V

GENERAL DISCUSSION

Throughout the program, the flexibility of the residents' behaviors to the various opportunities for environmental responsiveness remained high. The gains made during each phase of the program, especially the responsiveness towards peers and toys, were unexpected.

Conclusions

A program of modified intensive play can be effective in developing environmental responsiveness in crib-bound, profoundly retarded institutionalized individuals of varying ages, lengths of institutionalization, and physical handicaps. During the three phases, responsiveness towards adults, toys, and peers, all participants seem to have reflected high degrees of responsiveness. Two observations concerning the results are noteworthy.

First, in institutional settings the young residents generally receive the most attention and care. As these individuals grow older, their size and handicaps become much more difficult for the attendants. Because of this, these residents stop receiving as much attention from the daily immediate care staff. Similarly, the residents stop responding to a world which is slowly stopping its responsiveness to them. An exception is the child who, because of his particular handicapping conditions, remains small. His size and handicaps are not overwhelming, and the chance for a long-term relationship to develop is increased. He remains approachable by the staff members, and the interaction of responsiveness is not reduced.

An example of this trend is Billy who was in the youngest half of the group, but whose length of institutionalization was the longest of all the members (Graph 6). Although Billy is ten years old, he is the size of most four or five year old children. His only outward physical handicap is his blindness. The opportunity for handling, brought about by his size and lack of gross physical handicaps, seems to have overcome the effects of being institutionalized for most of his life.

Second, the strongest improvement seems to have developed in the responsiveness to toys, the second strongest in response to peers, and finally, the least responsiveness was recorded in response to adults, the teacher specifically. The single factor which seems to have the most effect on this trend was opportunity. Toys were potentially the single item which could be made available to the participants with the least amount of change in the institutional setting. Toy placement in the cribs or on the mats was controlled easier and on a more regular basis than placing children in contact with their peers. The only consistent adult interaction was with the examiner. The availability of this adult, regulated because of the particular class sessions, was not as available as toys or peers.

Implications

The underlying objective for this thesis was to develop a technique for building appropriate environmental responses in crib-bound profoundly retarded individuals in an institutional setting while changing that setting as minimally as possible. The intent of minimal change was to demonstrate to the staff in immediate contact with the

residents that significant change or improvements could be affected in the residents' behaviors without vast changes in staff, equipment, or setting. Significant changes in behavior could be made with the present staff situation, present amount of toys, and within the usual setting in which the residents were involved.

Time seems to be the major issue limiting the interaction between the immediate care staff and residents. The time spent individually with each participant amounted to no more than fifteen or twenty minutes per day throughout the program period for this project. This amount of time seems to be adequate for providing activities for the participants and for providing adequate changes in their environmental responsiveness.

Programming this amount of time into the daily schedule of the immediate care staff seems reasonable. Time could be utilized before or after bathing, feeding, or dressing. If this amount of time could be set aside for only one of the residents being cared for by each staff member, even on an irregular basis, significant change is possible.

Consistency with Society

The following articles examined various areas which related to the behavioral changes affected by the project. These articles deal with time spent in mother-child interaction, safe-guards for play, and the unexpected but related behavioral changes which may come about as the result of working with institutional residents.

Boocock (1975) reported that the average mother at home spends no more than fifteen or twenty minutes per day with her pre-school children, including all the time of actual communication with the

children. Boocock reported that this time may be the only meaningful daily contact with the adults in the children's world. Boocock also reported the results of a study by Billar which found that fathers generally spend only ten to fifteen minutes with their children engaging in the same kind of activities. The time alloted for the interaction of the institutionalized population with adults seems to be equivalent with standards outside the institution.

The second article, Don't Shake the Baby (1974), discusses the harmful effects of vigorous, rough housing types of play. Play between parent and infant, which involves tossing the child in the air or rocking or bouncing him hard, has been related to subdural hematomas. Such play with children under two years of age may cause severe brain damage or death. The play included in this study involved close body contact play for all types of rocking, caressing, and cuddling and was of a gentle, soothing nature.

The third item, part of the results of Quilitel and Gray (1974), reported unexpected behavior changes made by the residents with which they were working. The unexpected behavior changes or improvements they reported included increased length of attention span, improved eye contact, and increased responsiveness to verbal directions. The authors noted that this seemed to provide a noticeable increase in the enthusiasm and morale of staff members.

The play activities provided in the present study revealed similar unexpected responses in the subjects. Also, the improvements in the residents were visible to the immediate care staff members and this created a great deal of interest concerning the type of approach used

in the program. This helped to confirm the results of the program and verify the effectiveness of program change within the present institutional situation.

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