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ABSTRACT

The San Francisco Infant Program provides classroom and home educational programs for handicapped (or at-risk) infants (0-18) months and toddlers (18-36 months), parent training, preservice and inservice training, and research opportunities. The transdisciplinary training focuses on the following skills: gross and fine motor, cognitive, communication, self-help, and social. A total of 41 children were enrolled during 1979-1982, with about 20 participants per year. The program also: 1) established a model for the diagnosis, assessment, and referral of Caucasian, Black, and Spanish-speaking clients; 2) trained parents to develop systematic learning activities with their children; and 3) measured infant behaviors and parent teaching skills using standardized tests. The staff includes an infant and toddler teacher, physical and speech therapists, and consultants. In cooperation with San Francisco State University, students were trained in atypical infant development, and research projects were designed to validate curriculum programs for handicapped infants. The substantial appended materials include: sample infant curricula and a list of curricular objectives; data on services, training, and other program accomplishments; an individualized education program form; data collection forms for formulating infant educational plans; a master's thesis on techniques to train motor responses with severely handicapped infants; a description of electronic toys used to train a Down's syndrome toddler; a student training manual for special education (emphasizing severely handicapped and early childhood); and a program description emphasizing parent education and service provision to a culturally diverse population. (SEW)

# SAN FRANCISCO INFANT PROGRAM

DEPARTMENT OF SPECIAL EDUCATION
SAN FRANCISCO STATE UNIVERSITY
SAN FRANCISCO, CALIFORNIA

## FINAL PROGRESS REPORT

JULY 1, 1981 - JUNE 30, 1982

Handicapped Children's Early Education Program
U.S. Department of Education
Washington, D.C.

The Project reported herein was performed pursuant to Grant No. G007900515 from the U.S. Department of Education. The opinions expressed herein do not necessarily relfect the position or policy of the U.S. Department of Education and no official endorsement by the U.S. Department of Education should be inferred.

The report is organized in two sections. Section 1, an overview includes a brief review of program components and description of the project's current status. Section 2 details the project's accomplishments over the three year funding period.

## OVERVIEW

### PROGRAM DESCRIPTION

Maria S. is an 8 month old severely handicapped child who has visual, hearing and motor impairments resulting from a viral infection during her mother's pregnancy. Maria and her mother attend school weekly. Maria's mother is learning to position and handle Maria in order to help her to eat from a spoon and to move her arms toward midline. Mrs. S. is excited that Maria is beginning to hold her head up and take food from the spoon; she is teaching Maria's older sister to assist in the feeding. Mrs. S. reports that she likes the school program and home visits because, for the first time, she is receiving concrete help in teaching Maria. She also looks forward to parent meetings since she gets to take a break from child care and talk with other parents, a welcome opportunity to meet new friends as her family lives so far away in Mexico.

Lamont is learning to match objects, to take turns in activities such as choosing and labeling toys when in a small group, to imitate a sequence of movements, and to use words such as "juice" to tell his teachers and parents what he wants. Lamont joins his classroom peers (some of whom are developmentally typical and integrated into the class for delayed toddlers) in school two times per week. His father attends the program with him in order to coordinate and plan with the teachers activities which will enhance Lamont's learning and development. Mr. W. discusses Lamont's education plans with his wife, who works during the day, so that they can together implement the activities in the home. Lamont is a 26 month old Down syndrome child. His parents hope he will attend as normal a preschool and kindergarten program as possible when he "graduates" from the infant/toddler project.

Maria and Lamont are representative of participants in the San Francisco Infant Program. The program serves infants and toddlers from birth to three

years of age who have identifiable disabling conditions (ranging from mild to severe handicapping conditions). Families participating in the program come from all socioeconomic and racial and ethnic groups (White, Black, Hispanic, Asian) representative of the San Francisco Population.

The primary goal of the San Francisco Infant Program is to provide early intervention services for these infants and their families residing in the Bay Area. Training is given to children across all behavioral areas of development: gross motor, fine motor, cognitive, communication, self-help and social. Parent involvement is encouraged through parent training and support groups.

## Model Elements

The San Francisco Infant Program Model combines several major tenets or elements. These elements include: 1) the provision of services utilizing a transdisciplinary model, 2) the systematic instruction to children through a combination of a home and school based program, and 3) a focus on the child's interaction within the larger environment - the child's family.

The transdisciplinary model used in this context assumes that each staff or intervention team member provides input from her/his own area of expertise in the educational setting. Input consists not only of individual child assessment and education planning, but also the training of other staff members and parents to deliver these special services. For example, the physical therapist maintains the primary responsibility for assessments and recommendations regarding children's motor development. In addition, she

trains parents and other team members to position therapeutically and handle children to facilitate optimal performance and learning in all areas. She, in turn, has been taught by other team members to write behavioral objectives for her teaching programs and to utilize communication facilitation techniques.

The transdisciplinary service delivery model is implemented at a program location dontated by the San Francisco Unified School District through a collaborative arrangement with San Francisco State University. Infants and toddlers with their caregivers both attend a school program and receive home visits periodically. The combined home and school programs focus on assisting parents to develop systematic learning activities with their children and on enhancing the interactions of infants and toddlers with their parents, siblings and other caregivers. Thus, intervention is construed as a network of educational, informational and support services for the child and family.

## Services to Children

The twenty children participating in the San Francisco Infant Project are placed in instructional groups on the basis of chronological age. Infants who range in age from birth to 18 months are divided into two groups of five and attend school once a week for three hours with their parent(s) or primary caregiver (e.g., babysitter, grandparent). Toddlers (18 months - 36 months) attend school two-three mornings per week, accompanied by a parent-caregiver. Additionally, all children and families are visited in their homes biweekly by staff members.

Child change and development is measured on two formal instruments, the Bayley Scales of Infant Development and the Uniform Performance Assesment System (UPAS). Additionally, continuous measurement of child acquisition

of target goals is taken on a criterion-referenced checklist corresponding to the program's curriculum objectives (objectives and programs represent a compilation of existing nationally tested infant/toddler curricula).

## Services to Families

Parents are viewed as active participants in the educational process, functioning both as planners and teachers of their children. Parents in the San Francisco Infant Program receive assistance in designing and implementing training programs for their children. Parents also are offered information on community resources and referrals for specialized needs. Two types of parent groups are available to Infant Program participants in addition to the classroom component. The focus of one parent group is on providing support and counseling; the second group meets for workshops on topics selected by parents. Parents respond to a parent "consumer" satisfaction measure twice annually to deliver specific feedback to the staff on program services.

## Staff

The transdisciplinary team of the San Francisco Infant Program consists of the following members: Project Direct, Project Coordinator, Infant/Toddler Teacher, Physical Therapist, Speech Therapist and Parent Coordinator (part-time) and medical and psychological consultants. Biweekly staff inservice training sessions are held.

## PROJECT STATUS

The San Francisco Infant Program has been funded through the California State Department of Developmental Services as a vendor for the Regional Center System to provide services to developmentally disabled infants and toddlers. As such, the program will continue to fully operate as it has for the past three years.

The program has been recognized as a major infant/toddler program in the Bay Area, particularly as a program which provides services to multicultural children and families. The training and dissemination activities begun through the federal demonstration funding are being continued and represent a unique and major contribution to the Bay Area. The summary of program accomplishments is detailed in the following section.

## PROJECT ACCOMPLISHMENTS

Project accomplishments are organized and presented by specific program components. Project objectives and activities are detailed in Table 1. All objectives were met as specified in the proposed timeline. A numerical summary of accomplishments is provided in Table 2.

### SERVICES TO CHILDREN

Objective 1 (see Table 1, Objective 1.1-1.4), the establishment of a combination classroom and homebased infant and toddler program, was accomplished during Year 1. Activities 1-8 and 12 and Outcomes 1-3 under Objective 1 were initiated during Year 1 and continued in Year 2.

Year 2 activities focused primarily on expanding the toddler (18-36 month old) program. During Year 3 the program was expanded even further to include two toddler and two infant groups. Emphasis for toddlers was placed on pre-academic and preschool readiness skills so that children were prepared upon "graduation" for public school preschool programs. Traditionally, public school preschools in the San Francisco Unified School District have been segregated. Through the efforts of school district personnel, parents in our infant/toddler program and our project staff, two new preschool programs were established for "graduates" of our intervention program. The new programs provide opportunities for integrated activities with nonhandicapped children for at least half of their school experiences.

A total of 41 children were enrolled in the program from 1979-1982 with approximately 20 children in the program in a given year. Table 3 lists the disability and ethnic groupings of children served throughout the three year period. As these data indicate, the sample of families served by the infant/toddler program reflects the diverse, multicultural population of San Francisco.

Follow-up interviews have been conducted with the families of all children who have graduated from the program. Of fourteen graduates, four were placed in programs in the Bay Area for the severely handicapped, one in a program for the orthopedically handicapped, seven in noncategorical programs for preschool children with special needs, and two are enrolled in regular preschool programs. All children have contact with nonhandicapped children for some portion of their school day. The staff of the San Francisco Infant Program have worked with parents and San Francisco Unified School District personnel to achieve placements in the least restrictive environments for these children, environments that provide the same academic training and integrated opportunities children experienced in our toddler program. As was previously discussed, these efforts have resulted in improved relations with the school district for infant programs in the city and a great expansion in the program options available to preschool aged children with special needs.

Of the other children at one time enrolled in the program, eighteen are continuing because they have not yet reached age three, two are deceased, and six moved to other cities. Additionally, during Years 2 & 3, seventeen and eleven children respectively were referred to other agencies by this program because the number of staff could not accommodate a larger number of children and/or because another placement was more appropriate for the specific child and family.

Referral arrangements established by the Project Director (Dr. Hanson) during Year 1 (Activity 5, Objective 1) were continued throughout the three year period. A total of 79 children were referred during this time with referrals coming from a variety of agencies including: University of California Medical Center, Mt. Zion Hospital, San Francisco General Hospital; St. Luke's Hospital, Golden Gate Regional Center, the local Developmental Disabilities

Council, Department of Social Services, California Childrens' Services, other infant programs in the city, Down's Syndrome League, public health nurses, and local pediatricians. A program flyer was printed to facilitate the referral process. Given the need in this city for services to young disabled children, especially those from multicultural and disadvantaged homes, referrals were continuous during the three year period.

A review of available infant curricula was conducted and components of each selected for use in this program (Activity 10, Objective 1). These curricula included the Portage Project, the Oregon Project for Visually Impaired and Blind Preschool Children, Hanson's Teaching Your Down's Syndrome Infant: A Guide for Parents, Finnie's Handling the Young Cerebral Palsied Child at Home, the University of Oregon Center of Human Development Preschool Curriculum Guide, Hawaii Early Learning Profile (HELP) Guide, and the HI Comp Project Curriculum. Additional early intervention curricula were collected and were available as references for staff for use in the development of each child's individual education plan. From these resources staff members compiled a comprehensive curriculum for the infant and toddler programs by identifying, modifying, and supplementing relevant approaches, activities and strategies from these existing curricula. Samples from this curriculum are included in Appendix A. Appendix B provides a list of curricular objectives and Appendix C presents a copy of the Individualized Education Program form.

PARENT/FAMILY PARTICIPATION

Objective 2 (see Table 1, Objective 2.1-2.3) was begun during Year 1 and continued in Years 2 and 3. Since parents were viewed as active participants in the educational process, they functioned both as planners and teachers of their children. Relevant literature was reviewed (Activity 1, Objective 2) and a system for formulating infant educational plans in conjunction with the child's parents was devised along with program sheets and data collection forms (See Appendix D). Parents received assistance in designing and implementing training programs for their children 1-2 times per week (Activities 2 and 3, Objective 2). Additionally, parent support groups were formed and met biweekly for discussion and counseling (Activity 4, Objective 2). One parent group also requested formal presentation on child behavior management and child development during this group time. Therefore, these topics were covered in addition to regular discussions of problems and issues in the care of a handicapped child. A second type of parent group was established as well. This group met periodically in evening or afternoon workshop sessions with invited speakers. Topics covered included:

1) Public Law 94-142 and parent and child education rights
2) The IEP process and how to work with the school district
3) Speech and language development and facilitation strategies
4) Pediatric care and common questions
5) Seizure disorders
6) Controversial therapies
7) Supplementary services in the Bay Area
8) Construction of toys and infant materials

These groups provided an informal setting in which parents could become better acquainted with one another and also acquire new information.

Families participating in the infant/toddler program represented diverse, multicultural backgrounds as well as various family constellations. Thus, parent groups were planned to serve single mothers, single fathers, two parent families, extended families and foster families, most of whom differ culturally from one another. Through multilanguage and multicultural staff members and tremendous flexibility, we accomplished the task of meeting the needs of this diverse group. Attendance at parent meetings and feedback from parents indicated parent satisfaction with this program component.

## ASSESSMENT OF CHILD PROGRESS AND PROGRAM OUTCOMES

### Child Behavior Change

Evaluation of program outcomes included multiple methods (Activity 11, Objective 1). Child progress was measured by use of two standardized instruments, The Bayley Scales of Infant Development (Bayley, 1969) and the UPAS (Uniform Performance Assessment System) (White, Edgar & Haring, 1978). Both were administered at the beginning and end of the school year. Additionally, continuous measurement of child acquisition of target goals was made on a criterion-referenced instrument, a checklist of objectives tied specifically to the program curriculum items. Child change data for Years 2 and 3 are presented in Table 4 (Bayley data), Table 5 (UPAS data) and Table 6 (Curriculum Objectives Checklist data). All analyses employed a comparison where each subject was measured twice. Pretest (September-October testing) and postest (May-June testing) comparisons were made utilizing a t-test for correlated means. Pre-postest analyses yielded significant differences for all measures. Thus, these findings suggest that children participating in this early intervention program did change over the course of their program involvement.

These findings are remarkable in light of the fact that children were compared as a group and not divided and compared by categories of severity levels. Thus, severely, multiply handicapped children were included in these analyses. Given expectations that these children would progress in smaller increments of change, remain stable, or regress as measured by standardized behavioral assessments, it follows that these scores would affect the group scores as a whole. Nevertheless, significant changes were noted for all pretest-postest comparisons.

Single subject research designs (principally multiple baseline designs)

also have been utilized to establish the relationship between infant skill training efforts (performed by parents) and infant behavior change (Outcome 6, Objective 1 and Outcome 2, Objective 2). Six multiple baseline designs are presented in Figures 1-6. These designs show that child change was integrally linked to experimental educational procedures. Baseline behavior across all target skills indicated low behavior rates. Acquisition of these skills occurred only when training procedures were implemented (as indicated by the dotted lines). Numerals denote phases/steps in the training plan (derived from a task analysis of each target skill ). Behavior gains were maintained as shown by follow-up data points.

Parent Behavior Change

Data on parenting behavior (Outcome 2, Objective 3) utilizing the Parent Behavior Progression Scale (PBP) (Bromwich, 1981) were collected at the beginning (pretest) and end (postest) of the school year (see Table 7). Analysis of these data using a t-test for correlated means yielded statistically significant pre-post test differences. Thus, participation in the early intervention program did appear to positively affect parent behavior as increases in scores on the PBP represent more adaptive parenting skills, skills geared more closely to the children's developmental levels and needs.

Program evaluation procedures also included the gathering of demographic and descriptive data on chidren and families served and amount and degree of their participation. Further, a parent "consumer" survey form was developed as a measure of program outcome; this form is an adaptation of the Parent Reaction Questionnaire development by Project KIDS, Dallas, Texas. Tables 8 and 9 present for Years 2 and 3 respectively the number and percentage of parents responding to each survey item. Results clearly showed satisfaction with the program by participating families.

## INSERVICE TRAINING FOR PROJECT STAFF

Inservice training for project staff (Activity 9, Objective 1) was conducted both informally on an ongoing basis and through formal sessions by the Project director, staff members, and consultants. The training sessions were held on a biweekly basis. (Staff met as a group weekly also to discuss program issues.) Training topics included: writing behavioral objectives, curriculum development, teaching concepts, assessment of child progress, facilitating and structuring parent participation, structuring the classroom environment, record keeping and data gathering procedures, interdisciplinary team collaboration, CPR, motor development, positioning and handling, and single subject research designs. Given that presenters for the most part were staff members, these inservice sessions provided a formal method for training transdisciplinary staff members in each other's area. Additionally, WESTAR provided project consultation for staff training on evaluation issues, language development, and feeding program development. Finally, staff attended the SFSU course, Atypical Infant Development, taught by Dr. Hanson and workshops offered in the Bay Area for infant program personnel.

TRAINING FOR PERSONNEL FROM OTHER PROGRAMS OR AGENCIES

A major component of the San Francisco Infant Program was its collaboration with the Department of Special Education at San Francisco State University (Activities 1-3, Outcomes 1-3, Objective 3). Contacts were made with faculty and SFSU through informal discussions and through presentations made by Dr. Hanson to the Special Education faculty. During Year 2, one Doctoral student and eight Master's degree students in Special Education, three nursing students, two physical therapy students and one Master's student in Psychology received training in the infant program. During Year 3, five Doctoral students and 35 Master's students (primarily in Special Education) and two medical students trained in the program. Student teachers trained in the project for a minimum of one semester and received instruction on curriculum development, educational planning for individual children, working with parents, and data gathering. Other students received training ranging from one day to 20 hours/week depending upon their coursework assignments and project schedule.

During Year 3, the San Francisco Infant Program was selected as one of ten training sites in the state of California by the State Department of Education, Special Education Resource Network (SERN). The purpose of the Infant/Preschool SERN is to provide inservice training in early childhood special education to programs (both public and private) serving infants and preschoolers with exceptional needs and their families throughout California. Our program was chosen as an inservice site and provided training to early educators throughout the year. Training time varied depending on type of assistance requested by the trainees.

The San Francisco Infant Program in conjunction with the Department of Special Education at SFSU also sponsored a conference entitled "Visual and

Auditory Assessments for Preschool Aged Children". This conference was held at San Francisco State University in 1981 and was attended by more than 80 persons in the field coming from throughout the Bay Area. This topic was determined to be of great interest by participants in the West Bay Infant Consortium. As active participants and former chairs of the Consortium, the staff members of the San Francisco Infant Program volunteered their time to provide the conference in response to this Consortium Needs Assessment.

## RESEARCH

Research activities (Objective 4) related to curriculum validation and structuring of responsive environments for infants was begun during Year 2. One Master's thesis (Study 1) comparing traditional therapy techniques and the use of adaptive devices to train motor responses to severely handicapped infants was completed. That thesis is included in Appendix E.

Three related investigations also were conducted. In Study 2, a moderately handicapped child (3 year old with Down syndrome) was taught three new skills with the use of electronic equipment. Three training situations were constructed: an electronic puzzle toy, an electronic doll, and a matching task. The electronic toys are described in detail in Appendix F and plans are provided. A multiple baseline design was utilized to establish relationships between behavior change and the treatment program. Treatment 1 consisted of prompting the child to fit a puzzle piece into an electronic puzzle which lit up when two consecutive, noninterlocking puzzle pieces were placed. Treatment 2 involved the use of shaping techniques in a standard teaching situation to teach the child to match a common object with pictures of the same class of objects (e.g. match shoe to picture of a shoe). Treatment 3 incorporated a plastic stand-up doll equipped such that when the child was asked to find a body part (e.g. "find eyes") and respond correctly, the teacher would activate the doll to light up. Figure 7 presents the results from this study. As can be seen, training was integrally linked to child mastery of the tasks.

In Study 3, a severely, multiply handicapped infant (age 1 year) diagnosed as deaf, blind and functioning at the brainstem level was taught an operant kick response. This child had previously demonstrated no voluntary purposeful movements. Data from this study, utilizing an ABAB design are presented in

Figure 8. The child was placed on a vibrating mattress pad connected to a plexiglas kick panel. During baseline ($B_1$) the child had free leg access to the panel, but a kick was not consequated in any way. In the treatment phase ($T_1$) a kick was consequated by 3-5 seconds of mattress vibration. Few kicks were made during $T_1$. The mother indicated that the bulky diapers may have disrupted kicking responses. Therefore, the child's diapers were removed for all subsequent sessions. Baseline conditions were re-instituted (days 22-24) and followed by a second treatment phase and again by baseline. Data from these latter baseline-treatment-baseline conditions (Figure 8) establish a link between treatment utilizing the kick panel feedback system and the child's kick responses. Further replications are being conducted with this child using the kick panel and other types of feedback stimuli.

Study 4 is currently underway. It incorporates a pressure sensitive panel switch for use by a young severely handicapped infant to signal the parents (e.g. bring the parents to her). Upon pushing the panel with a very light touch, this severely, physically disabled year old child is learning to call her mother to her. No other signalling responses (e.g. vocalizing, gesturing) are available to her due to the severity of her disability.

Upon completion of all studies a paper will be submitted for publication in JASH (Journal of the Association for the Severely Handicapped). A second paper describing the equipment utilized is being prepared for submission to the journal, Teaching Exceptional Children.

## DEMONSTRATION AND DISSEMINATION ACTIVITIES

Agencies and university training programs were informed on a continuing basis of the demonstration responsibilities and capabilities of the San Francisco Infant Program (Activity 1, Objective 5). Agencies contacted included infant programs in San Francisco and around the Bay Area, Golden Gate Regional Center, hospitals and medical facilities, and the State Department of Education as well as the San Francisco Unified School District. Additionally, Dr. Hanson was an adjunct member of the State Task Force to develop a teaching credential for early intervention personnel. Members of this task force were selected from major early childhood teacher training programs, universities interested in starting early education training programs, and infant programs throughout the state. This group represented a contact pool for demonstration/dissemination activities. Staff members also were actively involved in the West Bay Infant Program Consortium, a group of all West Bay Area infant program personnel. One purpose of this group is to exchange information across programs, making it an ideal target for demonstration/dissemination activities. Dr. Hanson was chairperson of this consortium.

During Year 2, Dr. Hanson gave five formal and five informal presentations to education and medical agency personnel in San Francisco. Additionally, a number of visitors were given an introduction to the early intervention services offered by this project. Visitors included 34 graduate students in Special Education, two professors, five teachers, six education specialists, and four medical and nursing students (Activity 3, Outcome 2, Objective 5). In the second year of project operation 595 persons were instructed on program components and early intervention services.

During Year 3, staff members made eight formal and twelve informal

presentations and 61 visitors attended the program ( 4 teachers, 3 educational administrators, 3 physical therapists, 3 occupational therapists, 2 speech therapists, 4 social workers, 40 Doctoral and Master's level students in education and psychology, and two medical residents). In the third year the project components were presented to 786 persons.

During Years 2 and 3 the program has functioned as a training site for student teachers in special education (severely handicapped and early childhood emphases). The student training manual utilized with these students is appended in Appendix G.

Staff members are active also in the California Consortium of First Chance projects, a group committed to the enhancement of services for young handicapped children in the state of California and advocacy for early intervention services. Dr. Hanson is serving currently as president of this organization.

Additionally, the San Francisco Infant Program was selected as one of ten training sites in the state of California by the Special Education Resource Network (SERN). Training was provided during Year 3 for infant program personnel in the state (Activity 2, Outcome 1, Objective 5).

Finally, a written description of the program with particular emphasis on parent education and the design and implementation of services for a culturally diverse population was completed (Outcome 4, Objective 1 and Outcome 1, Objective 2). This report appeared as a paper in Topics in Early Childhood Education (Hanson, 1981)(see Appendix H).

## COORDINATION WITH OTHER AGENCIES

The Project Director, Dr. Hanson, met with each of the major infant programs in San Francisco (Children's Hospital Child Development Center, Variety Club Blind Babies Foundation, Easter Seal, and Family Developmental Center), California Children's Services, Department of Social Services, the local Developmental Disabilities Council, and the Golden Gate Regional Center to formulate plans for child referrals and exchange of services when appropriate. The Regional Center's function is to provide a complete assessment of disabled children (including medical, psychological, social work, speech) and refer children to appropriate services. As such, it was necessary for this program to establish close, workable ties with this agency. Coordination with the school district was inherent in the designed project in that the effort represented a collaborative arrangement with the San Francisco Unified School District (Activities 2-4, Objective 1). Project participation in the West Bay Infant Program Consortium also facilitated interagency cooperation.

REPLICATION

A pilot replication program was begun during Year 2 with the DeVoss Infant Program in San Jose (Outcome 1, Objective 5). These replication activities were expanded during Year 3. Data on the progress of children in the replication program as measured on the UPAS and the Project Curriculum Checklist are presented in Tables 10 and 11 respectively for Year 2 and in Tables 12 and 13 respectively for Year 3. Members of the DeVoss staff received inservice training at the San Francisco Infant Program and monthly consultation from program staff. These replication activities assisted the San Jose program particularly in the areas of curriculum development and planning and implementing a parent involvement program. Prior to replication activities, the San Jose program had no formal parent involvement. Thus, this replication effort was successful in expanding services to multiply handicapped infants and their families.

CONTINUATION

As of July 1, 1982, the San Francisco Infant Program was approved to receive funding from the State Department of Developmental Services to provide child treatment services. The program as such is vendorized through the Regional Center system to serve developmentally delayed clients. This funding allows for the continuation of the program at the same level as that provided by this federal demonstration grant.

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TABLE 1

TABLE 1

| OBJECTIVES | ACTIVITIES | OUTCOMES |
|---|---|---|
| 1. To establish a model demonstration educational service delivery system to atypical infants, age 0-3 in the San Francisco Unified School District, as a joint responsibility of the San Francisco Unified School District and the SFSU Department of Special Education. | 1. Recruit and hire staff. | 1. Establishment of atypical infant class with the S.F. Unified School District. |
| 1.1 To establish a classroom and homebound educational program for handicapped (or at-risk) infants 0-18 months. | 2. Select public school facility and negotiate classroom space. | 2. Receipt of child referrals from a variety of sources within S.F. |
| 1.2 To establish an atypical infant classroom in a public school facility in San Francisco for handicapped (or at-risk) toddlers 18-36 months of age. (Year 2 Objective). | 3. Obtain program approval from the S.F. Unified School District Board of Education. | 3. Identification of 15 infants (ranging from severely, multiply handicapped to developmentally delayed) and provision of services by June 30, 1979. |
| 1.3 To establish a service model including comprehensive diagnosis, assessment and referral of equal relevance to caucasian, black and Spanish-speaking populations in San Francisco. | 4. Procure necessary equipment (desks, chairs, tables) from school district and instructional materials from other sources. | 4. Written reports detailing transdisciplinary educational model operations (including inservice training). |
| 1.4 To establish a transdisciplinary educational service model. | 5. Contact hospitals, neonatologists, pediatricians, Regional Center, other infant programs, and Developmental Disabilities Council for referrals (program flyer printed to provide information to these contacts). | 5. Written reports documenting child progress. |
| | 6. Offer services to infants from birth to 18 months. | 6. At least 20% of child programs to include experimental designs which evaluate causal relationships between intervention procedures and behavior change. |
| | 7. Offer services to toddlers from 18-36 months (Year 2 Activity). | |
| | 8. Identify Advisory Committee members and organize regular meeting times. Assign and divide responsibilities. | |
| | 9. Establish regular staff inservice training sessions to include exchange of training information among disciplines. | |
| | 10. Review available infant curricula and select appropriate components in order to serve target population. | |
| | 11. Evaluate program outcomes by multiple methods: standardized instruments and continuous measurement of infant behaviors and parent teaching skills. | |

TABLE 1

| OBJECTIVES | ACTIVITIES | OUTCOMES |
| --- | --- | --- |
| | 12. Establish record keeping system (ensuring confidentiality) and management procedures (division of responsibilities among staff). | |

TABLE 1.

| OBJECTIVES | ACTIVITIES | OUTCOMES |
|---|---|---|
| 2. To establish a parent instruction, counseling and referral system as a component of the educational service system. | 1. Review literature relevant to the development of objectives. | 1. Brief written reports detailing procedures. |
| 2.1 To offer parents information on their rights and on infant services and resources on an individual and group basis in their native language. | 2. Establish a parent program of continuous infant skill training (includes curriculum and measurement systems). | 2. At least 20% of training programs performed to include experimental designs which evaluate causal relationships between intervention procedures and behavior change. |
| 2.2 To offer parents a comprehensive referral service for specialized needs relating to infant care. | 3. Conduct regular training sessions with parents. | 3. Descriptive data on parenting behavior and home factors and behavior change as it is related to intervention program. |
| 2.3 To offer parents instruction on infant training activities and measurement of progress with their atypical infants. | 4. Provide a parent support group (group meeting at least monthly)<br>a. Parent instruction on specific topics and counseling<br>b. Advocacy and information on client rights and services available.<br>c. Ongoing referral service for specialized needs. | |

TABLE 1

| OBJECTIVES | ACTIVITIES | OUTCOMES |
|---|---|---|
| 3. To establish a program in conjunction with SFSU to assist in the preparation of transdisciplinary personnel for handicapped infant programs in California. | 1. Offer training in atypical infant development through the Department of Special Education at SFSU. | 1. Course entitled "Atypical Infant Development" taught by Hanson at SFSU. |
| 3.1 To assist in the development of a training model to include nursing, special education, speech, and developmental therapies and pediatric medicine. | 2. Contact faculty members in other related disciplines and establish ties to coordinate course offerings to students. | 2. Provide students with course offerings in other departments to include nursing, communication disorders, physical development, as well as special education. |
| 3.2 To assist in the provision of a practicum training experience as a component of the SFSU training model. | 3. Provide practicum setting for graduate students from special education and related disciplines. | 3. Students (special education master's and doctoral level) and graduate students from related disciplines participate in the S.F. Infant Program to receive training. |

TABLE 1

| OBJECTIVES | ACTIVITIES | OUTCOMES |
|---|---|---|
| 4. To establish a program in conjunction with SFSU and U.C. Berkeley to assist in the provision of a research facility for the validation of assessment and curriculum programs for handicapped infants. | 1. Design of research projects related to assessment and curriculum validation. | 1. Written reports and professional articles. |
| 4.1 To assist the SFSU Department of Special Education in transdisciplinary research efforts aimed at curriculum validation activities by providing a laboratory for the controlled study of infant assessment and training. | 2. Design of research projects related to structuring of responsive infant environment particularly the construction of adaptive equipment. | 2. Presentations at professional conferences.<br><br>3. Dissemination of findings to professionals and parent (where appropriate) community. |

TABLE 1

| OBJECTIVES | ACTIVITIES | OUTCOMES |
|---|---|---|
| 5. Demonstration and dissemination of training model to infant program personnel, education graduate students, medical personnel and other interested professionals and laypersons. | 1. Contact mental health agencies, school systems, state agencies, universities, and other infant programs to recruit personnel and program staff interested in receiving training in this model,<br><br>2. Design an inservice training program for persons who work directly with handicapped infants and their families.<br><br>3. Design systematic visitor observation system. | 1. Provide indepth training program to persons who upon completion could replicate the program or components thereof.<br><br>2. Provide observation opportunities for persons to learn about early intervention programs, |

TABLE 2

Table 2

NUMERICAL SUMMARY OF ACCOMPLISHMENTS

| Activity | Year 1 (1979-80) | Year 2 (1980-81) | Year 3 (1981-82) | Total |
|---|---|---|---|---|
| **Services to Children** | | | | |
| Infants/Toddlers Screened | 31 | 24 | 24 | 79 |
| Infants/Toddlers Served | 19 | 18 | 28 | 41 |
| **Services to Families** | | | | |
| Family Members Served | 40 | 29 | 56 | 125 |
| Number of Sessions | 962 | 1724 | 2774 | 5460 |
| **Staff Development** | | | | |
| Hours of Staff Training/ Inservice | 101 | 262 | 84 | 447 |
| Student Placements/Volunteers Receiving Training | 8 | 15 | 42 | 65 |
| Hours of Student/Volunteer Training | 372 | 1788 | 1612 | 3772 |
| **Training for Personnel from Other Agencies** | | | | |
| Personnel from Other Agencies | | 12 | 19 | 31 |
| **Demonstration & Dissemination Activities** | | | | |
| Formal Presentations | 6 | 5 | 8 | 19 |
| Informal Presentations | 7 | 5 | 12 | 24 |
| Visitors to the Program | 49 | 51 | 61 | 161 |
| Persons Receiving Instruction on Program Components | 120 | 595 | 786 | 1501 |
| **Replication** | | | | |
| Children Served at Replication Site | | 8 | 8 | 16 |

TABLE 3

Table 3

Children
Demographic Data
1980 - 1982

| Child | Date of Entry | Years in Program | Disability/Areas of Delay | Ethnic Group |
|---|---|---|---|---|
| 1 | 1/23/80 | 1,2,3 | Down's Syndrome<br>Congenital Heart Disease<br>Cardiac Surgery | White |
| 2 | 1/23/80 | 1 | Down's Syndrome<br>Heart Defect | White |
| 3 | 1/31/80 | 1 | Down's Syndrome<br>Cardiac Surgery | White |
| 4 | 2/6/80 | 1,2,3 | Severe Developmental Delay<br>Microcephaly<br>Hypotonia<br>Hypercalcemia<br>Visually Impaired | Hispanic |
| 5 | 2/6/80 | 1,2,3 | Motor Delay<br>Hearing Impaired<br>Visually Impaired<br>Gastrointestinal Problems<br>Possible Child Abuse | Hispanic/White |
| 6 | 2/6/80 | 1 | Cerebral Palsy | White |
| 7 | 2/13/80 | 1,2,3 | Developmental Delay<br>Seizure Prone<br>Visually Impaired<br>Hearing Impaired<br>Stereotypic Behavior | Hispanic |
| 8 | 2/19/80 | 1 | Cerebral Palsy<br>Speech and Language Delay | Black |
| 9 | 2/21/80 | 1,2,3 | Premature<br>Cerebral Palsy<br>Seizures at Birth<br>Visually Impaired<br>Hearing Impaired | White |
| 10 | 2/27/80 | 1 | Developmental Delay<br>Speech and Language Delay | Hispanic |
| 11 | 3/1/80 | 1 | Down's Syndrome<br>Cardiac Surgery | White |

Table 3

| Child | Date of Entry | Years in Program | Disability/Areas of Delay | Ethnic Group |
|---|---|---|---|---|
| 12 | 3/25/80 | | Scoliosis<br>Surgery - Gastrostomy tube<br>Missing Limbs<br>Visually Impaired | White |
| 13 | 4/7/80 | 1,2,3 | Twin<br>Microcephalic<br>Spasticity<br>Hearing Impaired (questionable)<br>Visually Impaired | Hispanic |
| 14 | 5/7/80 | 1,2,3 | Down's Syndrome | White |
| 15 | 5/21/80 | | Developmental Delay<br>Chronic Ear Infection<br>Dislocated Hip<br>Abnormal Affect<br>Eye Surgery (congenital esotrophia) | White |
| 16 | 5/22/80 | | Spastic Diplegia<br>Motor Delays<br>Speech Delays<br>Probalbe Static Encephalopathy | Black |
| 17 | 6/10/80 | 1,2,3 | Down's Syndrome<br>Cardiac Surgery | White |
| 18 | 6/15/80 | | Spastic Quadriparesis<br>Herpes<br>Profound Mental and Developmental Retardation<br>Microcephaly<br>Obesity<br>Seizures<br>Visually Impaired<br>Hearing Impaired | Hispanic |
| 19 | 6/19/80 | | Chronic Encephalopathy<br>Motor Delays<br>Seizures<br>Strabismus | Black/White |
| 20 | 9/4/80 | 1,2,3 | Cerebral Palsy<br>Probable Neurofibromatosis<br>Spastic Diplegia<br>Visually Impaired (questionable) | Black |
| 21 | 9/3/80 | | Down's Syndrome | White (European and South American parents) |

Table 3

| Child | Date of Entry | Years in Program | Disability/Areas of Delay | Ethnic Group |
|---|---|---|---|---|
| 22 | 11/12/80 | 1,2,3 | Premature<br>Cerebral Palsy | White |
| 23 | 5/13/81 | 2,3 | Developmental Delay<br>Cortical Blindness<br>Hypotonia | White |
| 24 | 6/8/81 | 2,3 | Congenital Arrested Hydrocephalus<br>Developmental Delay<br>Congenital Bilateral Esotropia | Samoan |
| 25 | 6/16/81 | 2,3 | Growth and Developmental Delay<br>Questionable Microcephaly<br>Seizure Disorder | Hispanic |
| 26 | 6/24/81 | 2,3 | Meconium Aspiration<br>Perinatal Asphyxia<br>Gastrostomy Tube<br>Seizure Disorder | White |
| 27 | 9/11/81 | 2,3 | Chronic Encephalopathy<br>Seizure Disorder<br>Developmental Delays | Korean |
| 28 | 9/11/81 | 2,3 | Severe Mental Retardation<br>Speech and Language Delays<br>Motor Delays | Black |
| 29 | 10/28/81 | 3 | Down's Syndrome | Black/White |
| 30 | 11/10/81 | 3 | Sickle Cell Anemia<br>Pneumococcal Meningitis<br>Neurological Sequellae | Black |
| 31 | 12/11/81 | 3 | Down's Syndrome<br>Congenital Heart Disease | White |
| 32 | 1/27/82 | 3 | Severe Developmental Delay<br>Hearing Impaired (questionable) | Hispanic |
| 33 | 2/10/82 | 3 | Down's Syndrome | Black |
| 34 | 2/10/82 | 3 | SIDS<br>Myaclonic Seizure | Black/Puerto Rican |
| 35 | 3/11/82 | 3 | Down's Syndrome<br>Congenital Heart Disease | White |
| 36 | 3/18/82 | 3 | Developmental Delay<br>Severe Hypotonia<br>Febrile Seizures | White |

Table 3

| Child | Date of Entry | Years in Program | Disability/Areas of Delay | Ethnic Group |
|---|---|---|---|---|
| 37 | 5/6/82 | 3 | Moderate Global Developmental Delay<br>Spastic Diplegia | White |
| 38 | 5/13/82 | 3 | Down's Syndrome | White |
| 39 | 5/13/82 | 3 | Hydrocephalus | Black |
| 40 | 6/7/82 | 3 | Microcephaly<br>Polymyoclonia<br>"Sunset" Eyes with Opsoclonus<br>Severely Delayed Development | Hispanic |
| 41 | 7/1/82 | 3 | Spastic Diplegia | Black |

TABLE 4

Table 4

Bayley Scales of Infant Development

Year 2

MENTAL SCALE

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Developmental Age | Pre | 15 | 90.7 | 59.2 | -5.82 | p. .0001 |
| | Post | | 131.0 | 74.7 | | |
| Raw Score | Pre | 15 | 72.2 | 37.8 | -4.59 | p .0001 |
| | Post | | 95.2 | 42.6 | | |

PSYCHOMOTOR SCALE

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Developmental Age | Pre | 15 | 83.7 | 52.1 | -3.79 | p .002 |
| | Post | | 113.3 | 67.2 | | |
| Raw Score | Pre | 14 | 33.5 | 14.3 | -4.71 | p .0001 |
| | Post | | 40.8 | 14.7 | | |

Table 4 (continued)

Bayley Scales of Infant Development

Year 3

MENTAL SCALE

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Developmental Age | Pre | 18 | 104.5 | 77.6 | -3.81 | p .001 |
| | Post | | 143.7 | 103.9 | | |
| Raw Score | Pre | 18 | 80.7 | 45.9 | -4.74 | p .0001 |
| | Post | | 97.7 | 48.8 | | |

PSYCHOMOTOR SCALE

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Developmental Age | Pre | 18 | 89.4 | 59.1 | -4.17 | p .001 |
| | Post | | 125.3 | 82.9 | | |
| Raw Score | Pre | 18 | 32.7 | 18.2 | -4.72 | p .0001 |
| | Post | | 39.8 | 19.2 | | |

TABLE 5

Table 5

Uniform Performance Assessment System (UPAS)

Year 2

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Number of Items Passed (Total) | Pre | 16 | 42.6 | 28.5 | -9.12 | p .0001 |
| | Post | | 64.2 | 35.9 | | |
| Percentage of Items Passed (Total) | Pre | 16 | 14.7 | 9.9 | -9.32 | p .0001 |
| | Post | | 22.3 | 12.5 | | |

Year 3

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Number of Items Passed (Total) | Pre | 18 | 46.2 | 31.3 | -6.65 | p .0001 |
| | Post | | 73.2 | 42.8 | | |
| Percentage of Items Passed (Total) | Pre | 18 | 16.0 | 10.8 | -6.62 | p .0001 |
| | Post | | 25.5 | 14.9 | | |

TABLE 6

Table 6

Curriculum Objectives Checklist

Year 2

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Number of Items Passed (Total | Pre | 16 | 69.1 | 41.8 | -9.05 | p .0001 |
| | Post | | 107.1 | 52.3 | | |
| Percentag of Items Passed (Total) | Pre | 16 | 29.0 | 17.6 | -9.27 | p .0001 |
| | Post | | 44.8 | 21.9 | | |

Year 3

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Number of Items Passed (Total) | Pre | 18 | 91.5 | 55.3 | -5.09 | p .0001 |
| | Post | | 136.0 | 78.2 | | |
| Percentage of Items Passed (Total) | Pre | 18 | 32.5 | 17.7 | -5.37 | p .0001 |
| | Post | | 48.2 | 24.5 | | |

TABLE 7

Table 7

Parent Behavior Progression Scale

Year 2

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Total Raw Score | Pre | 16 | 47.7 | 12.2 | -3.90 | p .001 |
| | Post | | 54.3 | 10.2 | | |

Year 3

| | | N | Mean | S.D. | t value | Significance Level |
|---|---|---|---|---|---|---|
| Total Raw Score | Pre | 17 | 54.1 | 12.4 | -3.05 | p .008 |
| | Post | | 58.8 | 12.0 | | |

TABLE 8

Table 8
Year 2

PARENT REACTION QUESTIONNAIRE

(Adapted from Project KIDS, Dallas, Texas)

The San Francisco Infant Program wants to give you and your child the best possible program. Your answers to these questions will help us to strengthen and improve the program.

Please answer each question by placing an "X" in the space that best fits how you feel. An example would be:

| | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|
| 1) Is your child enrolled in the San Francisco Infant Program? | (X) | ( ) | ( ) | ( ) | ( ) |

Please feel free to write in any additional comments and clarify any answers you need to.

| | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|
| 1) Is the Infant Program staff qualified to work with your child? | 10/11 (91%) | | | | 1/11 (9%) |
| 2) Is there good communication between you and the project staff? | 9/11 (82%) | 2/11 (18%) | | | |
| 3) Is the teacher and therpaist helpful in explaining how to do the educational program? | 10/11 (91%) | | | | 1/11 (9%) |
| 4) Do you feel that you are an important participant in the program? | 8/11 (73%) | 3/11 (27%) | | | |
| 5) Has the program helped you to better understand your child's abilities and needs? | 11/11 (100%) | | | | |
| 6) Has the Infant Program helped you to learn more about working with your child? | 11/11 (100%) | | | | |
| 7) Are the educational programs written to meet the individual needs of your child? | 9/11 (82%) | 1/11 (9%) | | 1/11 (9%) | |

Table 8
Year 2

Parent Reaction Questionnaire
Page Two

| | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|
| 8) Are the toys useful in doing the educational program activities? | 8/11 (73%) | 2/11 (18%) | | 1/11 (9%) | |
| 9) Can you easily understand the directions for the educational program? | 10/11 (91%) | 1/11 (9%) | | | |
| 10) Did you feel that the therapist and teacher took too much time doing your child's evaluation? | | 1/11 (9%) | | 3/11 (27%) | 7/11 (64%) |
| 11) Did you get a complete explanation of your child's evaluation? | 6/11 (55%) | 4/11 (36%) | 1/11 (9%) | | |
| 12) Did you understand what you were told about the evaluation? | 9/11 (82%) | 2/11 (18%) | | | |
| 13) Did you agree with the evaluation results? | 7/11 (64%) | 2/11 (18%) | 2/11 (18%) | | |
| 14) Are you happy with the San Francisco Infant Program? | 10/11 (91%) | | | 1/11 (9%) | |
| 15) Do you feel that charting (data taking) is important? | 7/11 (64%) | 3/11 (27%) | 1/11 (9%) | | |
| 16) Are the charting instructions easy to follow? | 7/11 (64%) | 2/11 (18%) | | 1/11 (9%) | 1/11 (9%) |
| 17) Do you feel that your child has made progress in the Infant Program? | 11/11 (100%) | | | | |
| 18) Do you want to continue in the program? | 10/11 (91%) | | | | 1/11 (9%) |
| 19) Would you like to become more involved in the program? | 4/11 (37%) | 2/11 (18%) | | 2/11 (18%) | 2/11 (18%) |

* 1/11 (9%) No Answer

Table 8
Year 2

Parent Reaction Questionnaire
Page Three

| | | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|---|
| 20) | Has the San Francisco Infant Program helped other members of the family understand the child's needs and abilities? | 7/11 (64%) | 3/11 (27%) | | 1/11 (9%) | |
| 21) | Do you feel siblings should be included in the program in some way? * 1/11 (9%) No Answer | 5/11 (46%) | 1/11 (9%) | 2/11 (18%) | | 2/11 (18%) |
| 22) | Do you feel the integration of non-disabled children in the program has been beneficial? | 9/11 (82%) | | 1/11 (9%) | | 1/11 (9%) |

TABLE 9

Table 9
Year 3

## PARENT REACTION QUESTIONNAIRE

(Adapted from Project KIDS Dallas, Texas)

The San Francisco Infant Program wants to give you and your child the best possible program. Your answers to these questions will help us to strengthen and improve the program.

Please answer each question by placing an "X" in the space that best fits how you feel. An example would be:

| | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|
| 1) Is your child enrolled in the San Francisco Infant Program? | (X) | ( ) | ( ) | ( ) | ( ) |

Please feel free to write in any additional comments and clarify any answers you need to.

| | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|
| 1) Is the Infant Program staff qualified to work with your child? | 17/17 100% | | | | |
| 2) Is there good communication between you and the project staff? | 17/17 100% | | | | |
| 3) Is the teacher and therpaist helpful in explaining how to do the educational program? | 17/17 100% | | | | |
| 4) Do you feel that you are an important participant in the program? | 16/17 94% | 1/17 6% | | | |
| 5) Has the program helped you to better understand your child's abilities and needs? | 16/17 94% | 1/17 6% | | | |
| 6) Has the Infant Program helped you to learn more about working with your child? | 17/17 100% | | | | |
| 7) Are the educational programs written to meet the individual needs of your child? | 16/17 94% | 1/17 6% | | | |

Table 9
Year 3

Parent Reaction Questionnaire
Page Two

*No Answer

| | | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|---|
| 8) | Are the toys useful in doing the educational program activities? *1/17 6% | 15/17 88% | 1/17 6% | | | |
| 9) | Can you easily understand the directions for the educational program? | 16/17 94% | | | 1/17 6% | |
| 10) | Did you feel that the therapist and teacher took too much time doing your child's evaluation? | 12/17 70% | 1/17 6% | 1/17 6% | 1/17 6% | 2/17 12% |
| 11) | Did you get a complete explanation of your child's evaluation? *1/17 6% | 14/17 82% | 1/17 6% | | | 1/17 6% |
| 12) | Did you understand what you were told about the evaluation? | 16/17 94% | 1/17 6% | | | |
| 13) | Did you agree with the evaluation results? | 16/17 94% | | 1/17 6% | | |
| 14) | Are you happy with the San Francisco Infant Program? | 17/17 100% | | | | |
| 15) | Do you feel that charting (data taking) is important? | 14/17 82% | 1/17 6% | 2/17 12% | | |
| 16) | Are the charting instructions easy to follow? *1/17 6% | 13/17 76% | 1/17 6% | | 1/17 6% | 1/17 6% |
| 17) | Do you feel that your child has made progress in the Infant Program? | 17/17 100% | | | | |
| 18) | Do you want to continue in the program? | 16/17 94% | | 1/17 6% | | |
| 19) | Would you like to become more involved in the program? | 17/17 100% | | | | |

Parent Reaction Questionnaire
Page Three

| | | Yes | I think so | I don't know | I don't think so | No |
|---|---|---|---|---|---|---|
| 20) | Has the San Francisco Infant Program helped other members of the family understand the child's needs and abilities? | 10/17<br>59% | 6/17<br>35% | 1/17<br>6% | | |
| 21) | Do you feel siblings should be included in the program in some way? *2/17<br>12% | 10/17<br>58% | 2/17<br>12% | 2/17<br>12% | 1/17<br>6% | |
| 22) | Do you feel the integration of non-disabled children in the program has been beneficial? *3/17<br>18% | 12/17<br>70% | 1/17<br>6% | 1/17<br>6% | | |

Table 10

DeVoss Infant Program (San Jose)

UPAS Data

Pre- (January, 1981) & Postest (July, 1981) Comparisons

Percentage of Items Passed

| CHILD | PRE-ACADEMIC | GROSS MOTOR | COMMUNICATION | SOCIAL/SELF-HELP |
|---|---|---|---|---|
| 1 Pre (1/81) | 13% | 53% | 16% | 11% |
| Post (7/81) | 18% | 73% | 30% | 27% |
| 2 Pre (1/81) | 18% | 36% | 14% | 22% |
| Post (7/81) | 25% | 48% | 29% | 33% |
| 3 Pre (1/81) | 13% | 34% | 4% | 20% |
| Post (7/81) | 16% | 53% | 6% | 20% |
| 4 Pre (1/81) | 36% | 59% | 46% | 44% |
| Post (7/81) | 50% | 70% | 60% | 64% |
| 5 Pre (1/81) | 26% | 48% | 14% | 40% |
| Post (7/81) | 53% | 61% | 29% | 44% |
| 6 Pre (1/81) | 7% | 12% | 13% | 7% |
| Post (7/81) | 16% | 18% | 25% | 22% |
| 7 Pre (2/81) | 26% | 33% | 38% | 22% |
| Post (7/81) | 37% | 36% | 56% | 47% |
| e (2/81) | 14% | 20% | 7% | 9% |
| Post (7/81) | 16% | 21% | 9% | 13% |

Table 11

DeVoss Infant Program (San Jose)

Curriculum Checklist Data

Pretest (January, 1981 & Postest (July, 1981) Comparisons

Number & Percentage of Items Passed

| CHILD | COMMUNICATION | GROSS MOTOR | FINE MOTOR | COGNITION | PRE-ACADEMIC |
|---|---|---|---|---|---|
| 1 Pre | 7/28 (25%) | 43/73 (59%) | 29/51 (57%) | 13/30 (43%) | 0/46 (0%) |
| Post | 15/28 (54%) | 43/73 (59%) | 49/51 (96%) | 19/30 (63%) | 0/46 (0%) |
| 2 Pre | 6/28 (21%) | 41/73 (56%) | 38/51 (75%) | 24/30 (80%) | 0/46 (0%) |
| Post | 15/28 (54%) | 49/73 (67%) | 41/51 (80%) | 24/30 (80%) | 1/46 (2%) |
| 3 Pre | 2/28 (7%) | 42/73 (58%) | 14/51 (27%) | 11/30 (37%) | 0/46 (0%) |
| Post | 6/28 (21%) | 52/73 (71%) | 26/51 (51%) | 19/30 (63%) | 0/46 (0%) |
| 4 Pre | 19/28 (68%) | 52/73 (71%) | 48/51 (94%) | 25/30 (83%) | 13/46 (28%) |
| Post | 24/28 (86%) | 55/73 (75%) | 49/51 (96%) | 30/30 (100%) | 34/46 (74%) |
| 5 Pre | 8/28 (29%) | 43/73 (59%) | 43/51 (84%) | 25/30 (83%) | 0/46 (0%) |
| Post | 11/28 (39%) | 54/73 (74%) | 48/51 (94%) | 30/30 (100%) | 5/46 (11%) |
| 6 Pre | 6/28 (21%) | 10/73 (14%) | 17/51 (33%) | 7/30 (23%) | 0/46 (0%) |
| Post | 14/28 (50%) | 18/73 (25%) | 35/51 (69%) | 20/30 (66%) | 0/46 (0%) |
| 7 Pre | 20/28 (71%) | 26/73 (36%) | 44/51 (86%) | 21/30 (70%) | 3/46 (7%) |
| Post | 24/28 (86%) | 39/73 (53%) | 49/51 (96%) | 30/30 (100%) | 13/46 (28% |
| Pre | 0/28 (0%) | 15/73 (21%) | 37/51 (73%) | 14/30 (46%) | 0/46 (0%) |
| Post | 7/28 (25%) | 22/73 (30%) | 39/51 (76%) | 15/30 (50%) | 0/46 (0%) |

Table 12

DeVoss Infant Program (San Jose)

UPAS Data

Pretest (December, 1981) & Postest (June, 1982) Comparisons

Percentage of Items Passed

| CHILD | PRE-ACADEMIC | GROSS MOTOR | COMMUNICATION | SOCIAL/SELF-HELP |
|---|---|---|---|---|
| 1 | | | | |
| Pre (12/81) | 13% | 9% | 6% | 8% |
| Post (6/82) | 29% | 31% | 33% | 38% |
| 2 | | | | |
| Pre (12/81) | 12% | | 6% | 4% |
| Post (6/82) | 23% | 57% | 36% | 22% |
| 3 | | | | |
| Pre (12/81) | 15% | 47% | 5% | 16% |
| Post (6/82) | 17% | 51% | 14% | 18% |
| 4 | | | | |
| Pre (12/81) | 7% | 11% | 5% | 4% |
| Post (6/82) | 28% | 27% | 14% | 28% |
| 5 | | | | |
| Pre (12/81) | 7% | 16% | 4% | 4% |
| Post (6/82) | 12% | 32% | 9% | 20% |
| 6 | | | | |
| Pre (12/81) | 16% | 59% | 35% | 24% |
| Post (6/82) | 45% | 64% | 55% | 62% |
| 7 | | | | |
| Pre (12/81) | 10% | 21% | 4% | 8% |
| Post (6/82) | 39% | 63% | 36% | 52% |
| 8 | | | | |
| Pre (12/81) | 11% | 29% | 11% | 10% |
| Post (6/82) | 37% | 61% | 38% | 46% |

Table 13

DeVoss Infant Program (San Jose)

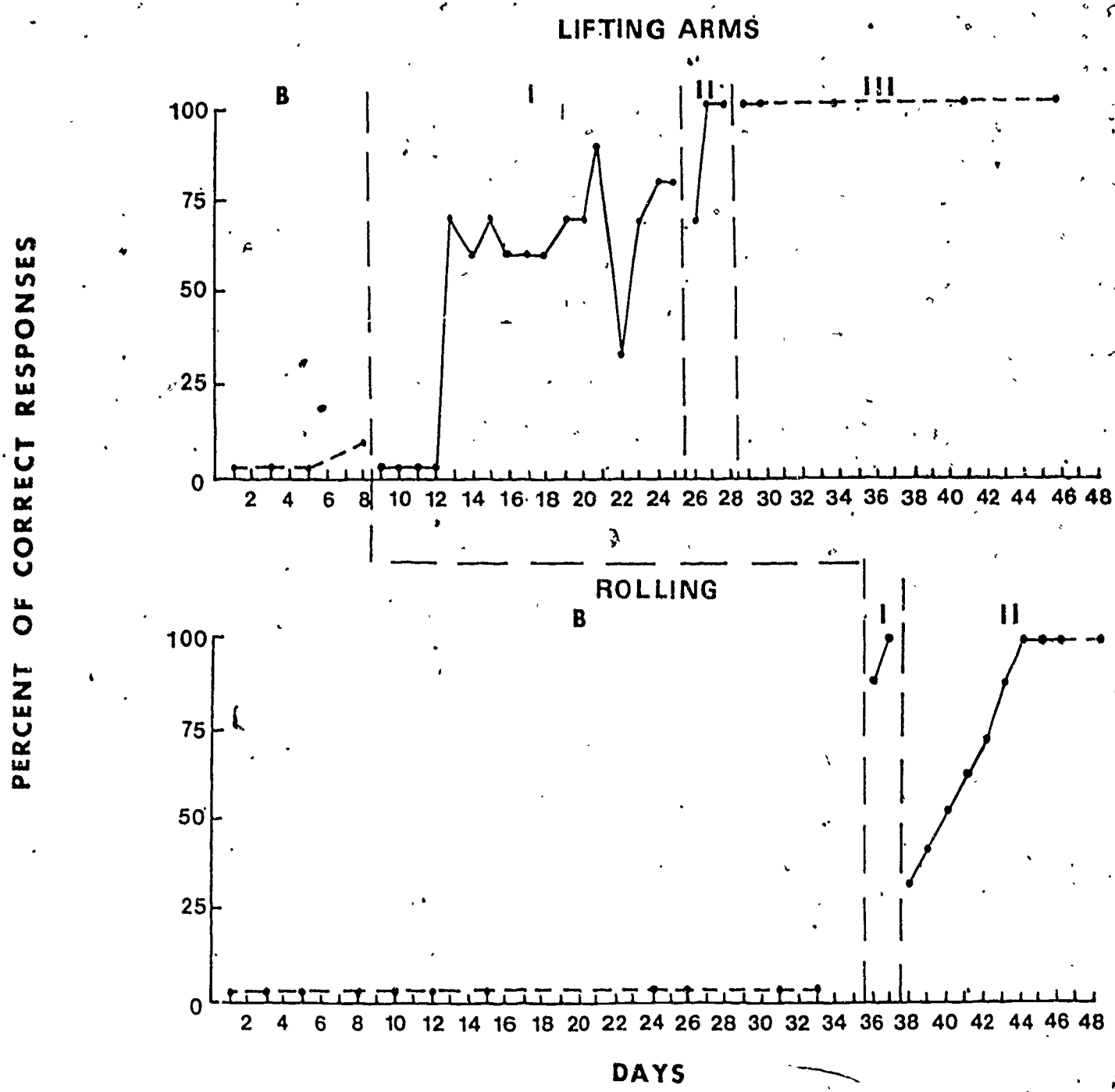
Curriculum Checklist Data

Pretest (December, 1981) & Postest (June, 1982) Comparisons

Number & Percentage of Items Passed

| CHILD | SOCIAL/ SELF-HELP | COMMUNICATION | GROSS MOTOR | FINE MOTOR | COGNITION | PRE-ACADEMIC |
|---|---|---|---|---|---|---|
| 1 Pre | 26/60 (43%) | 3/30 (10%) | 70/112 (63%) | 22/52 (42%) | 16/30 (53%) | 2/45 (4%) |
| Post | 42/60 (70%) | 15/30 (50%) | 80/112 (71%) | 46/52 (88%) | 26/30 (87%) | 3/45 (7%) |
| 2 Pre | 20/60 (33%) | 10/30 (33%) | 73/112 (65%) | 31/52 (60%) | 20/30 (67%) | 1/45 (2%) |
| Post | 30/60 (50%) | 23/30 (77%) | 75/112 (67%) | 39/52 (75%) | 28/30 (93%) | 10/45 (22%) |
| 3 Pre | 14/60 (23%) | 2/30 (7%) | 61/112 (54%) | 21/52 (40%) | 1/30 (3%) | 0/45 (0%) |
| Post | 17/60 (28%) | 3/30 (10%) | 71/112 (63%) | 25/52 (48%) | 1/30 (3%) | 1/45 (2%) |
| 4 Pre | 20/60 (33%) | 2/30 (7%) | 62/112 (55%) | 20/52 (38%) | 13/30 (43%) | 0/45 (0%) |
| Post | 27/60 (45%) | 8/30 (27%) | 73/112 (65%) | 39/52 (75%) | 17/30 (57%) | 5/45 (11%) |
| 5 Pre | 18/60 (30%) | 2/30 (7%) | 76/112 (68%) | 22/52 (42%) | 5/30 (17%) | 1/45 (2%) |
| Post | 22/60 (37%) | 5/30 (17%) | 80/112 (71%) | 34/52 (65%) | 11/30 (37%) | 2/45 (4%) |
| 6 Pre | 39/60 (65%) | 20/30 (67%) | 68/112 (61%) | 38/52 (73%) | 27/30 (90%) | 6/45 (13%) |
| Post | 56/60 (93%) | 25/30 (83%) | 73/112 (65%) | 45/52 (87%) | 30/30 (100%) | 30/45 (67%) |
| 7 Pre | 37/60 (62%) | 5/30 (17%) | 69/112 (62%) | 38/52 (73%) | 25/30 (83%) | 3/45 (7%) |
| Post | 54/60 (90%) | 17/30 (57%) | 74/112 (66%) | 49/52 (94%) | 28/30 (93%) | 29/45 (64%) |
| 8 Pre | 29/60 (48%) | 7/30 (23%) | 66/112 (59%) | 37/52 (71%) | 19/30 (63%) | 3/45 (7%) |
| t | 52/60 (81%) | 19/30 (63%) | 71/112 (63%) | 49/52 (94%) | 29/30 (97%) | 28/45 (62%) |

FIGURES 1 - 8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II
III
100
75
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
ROLLING
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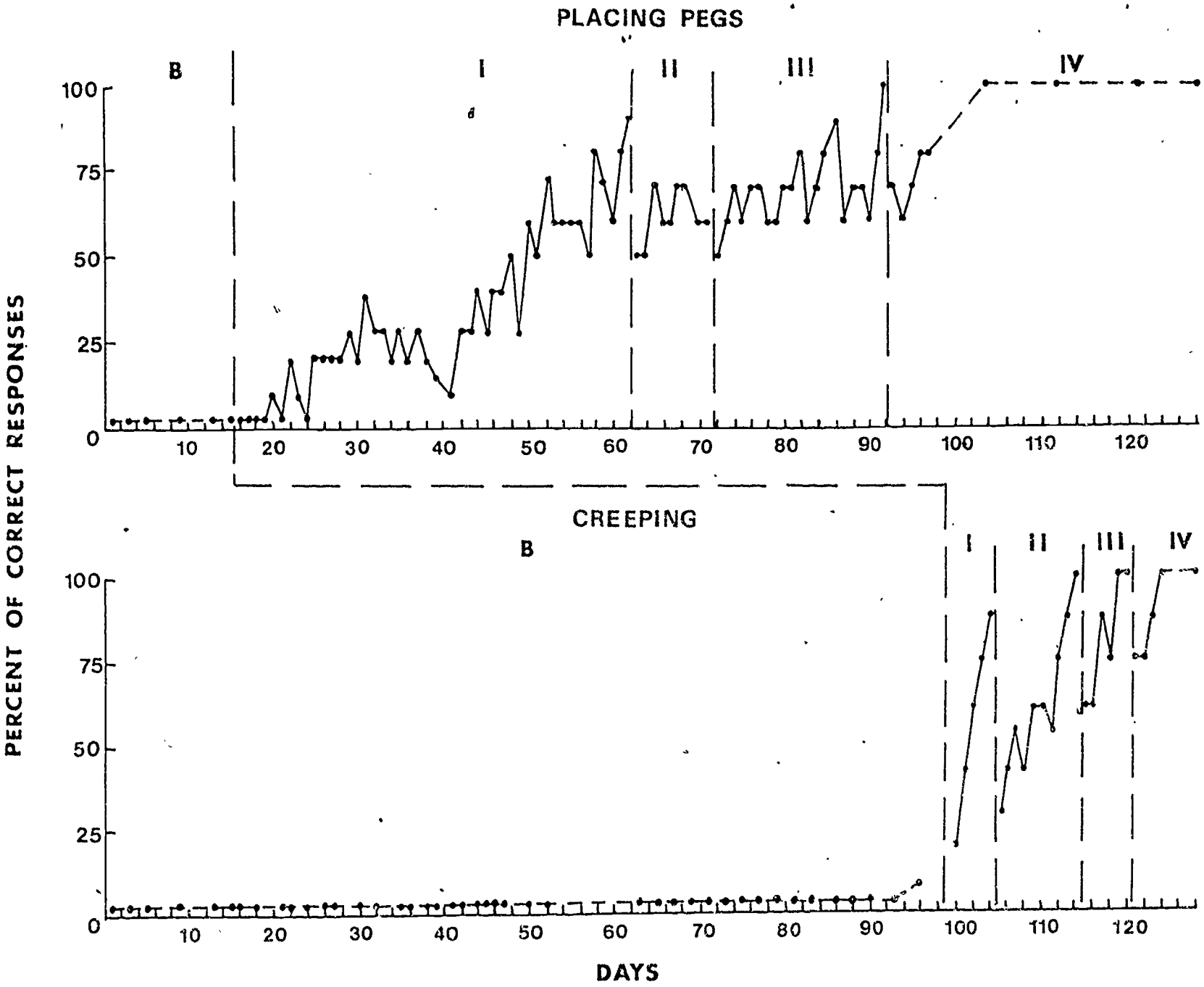
DAYS
PERCENT OF CORRECT RESPONSES

Figure 1


PLACING PEGS
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80
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100
110
120
CREEPING
B
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II
III
IV
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75
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25
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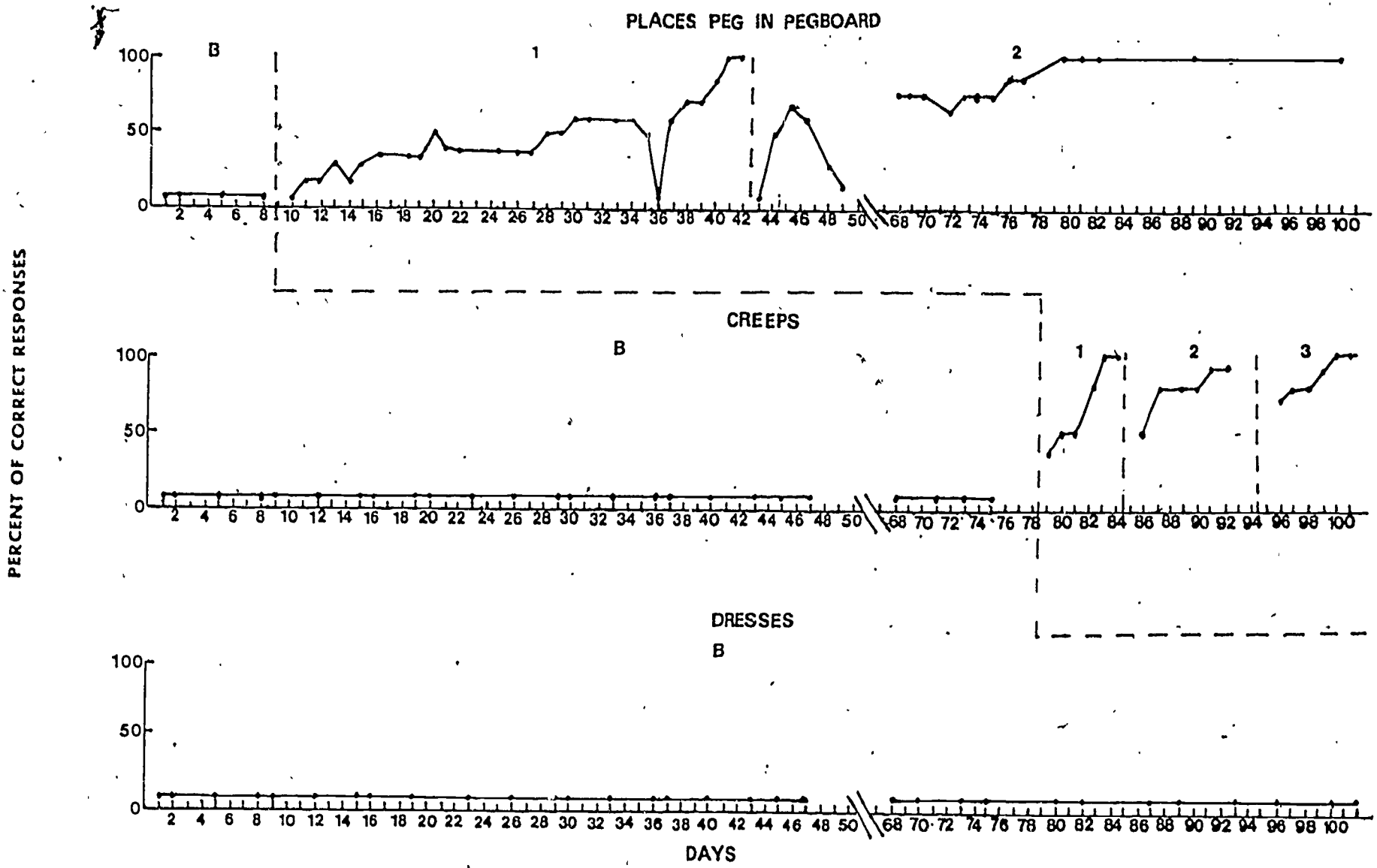
100
110
120
PERCENT OF CORRECT RESPONSES
DAYS

Figure 2


PLACES PEG IN PEGBOARD
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
CREEPS
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
DRESSES
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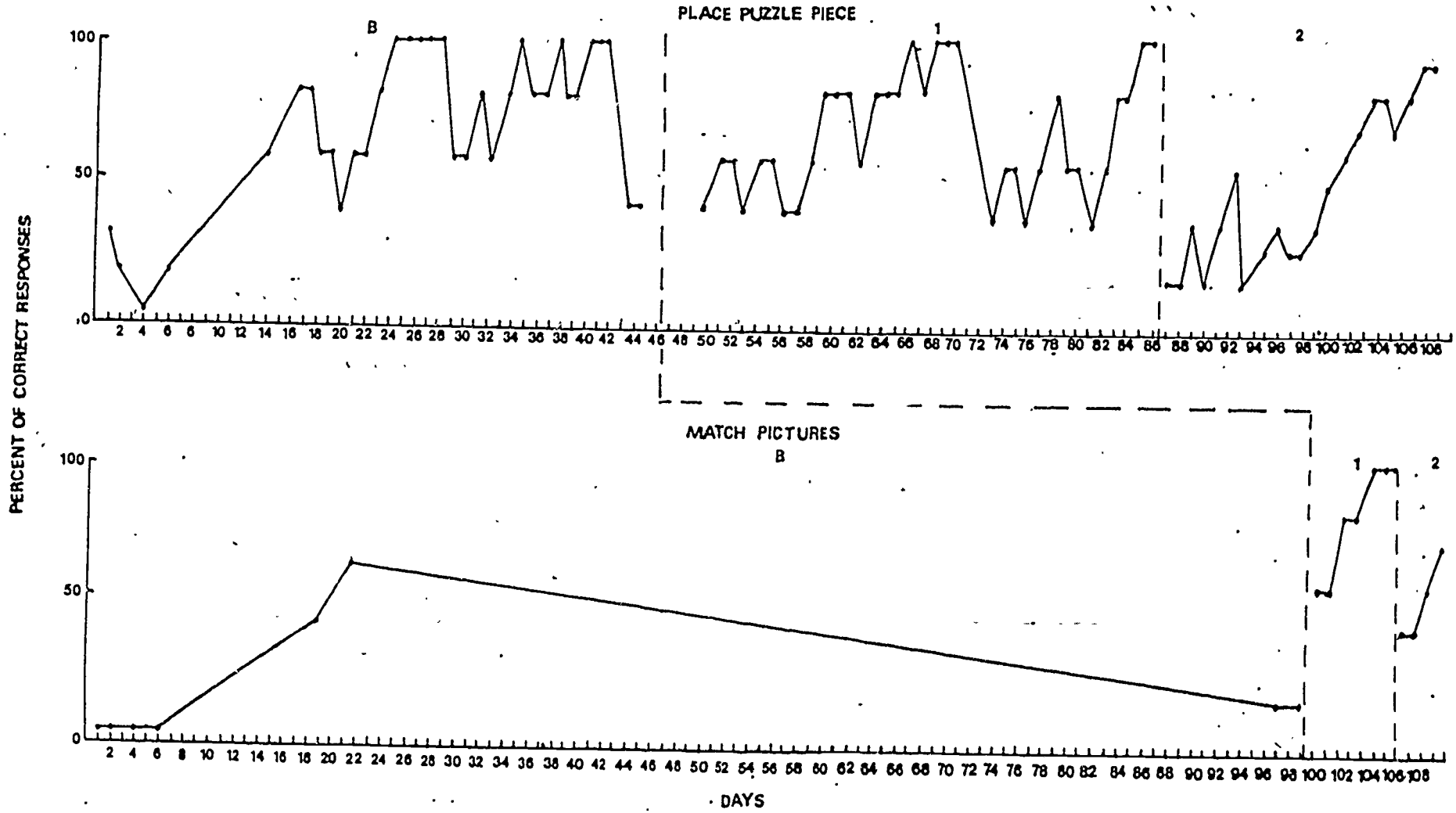
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
DAYS
PERCENT OF CORRECT RESPONSES

Figure 3


PLACE PUZZLE PIECE
B
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PERCENT OF CORRECT RESPONSES
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108
MATCH PICTURES
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108
DAYS

Figure 4

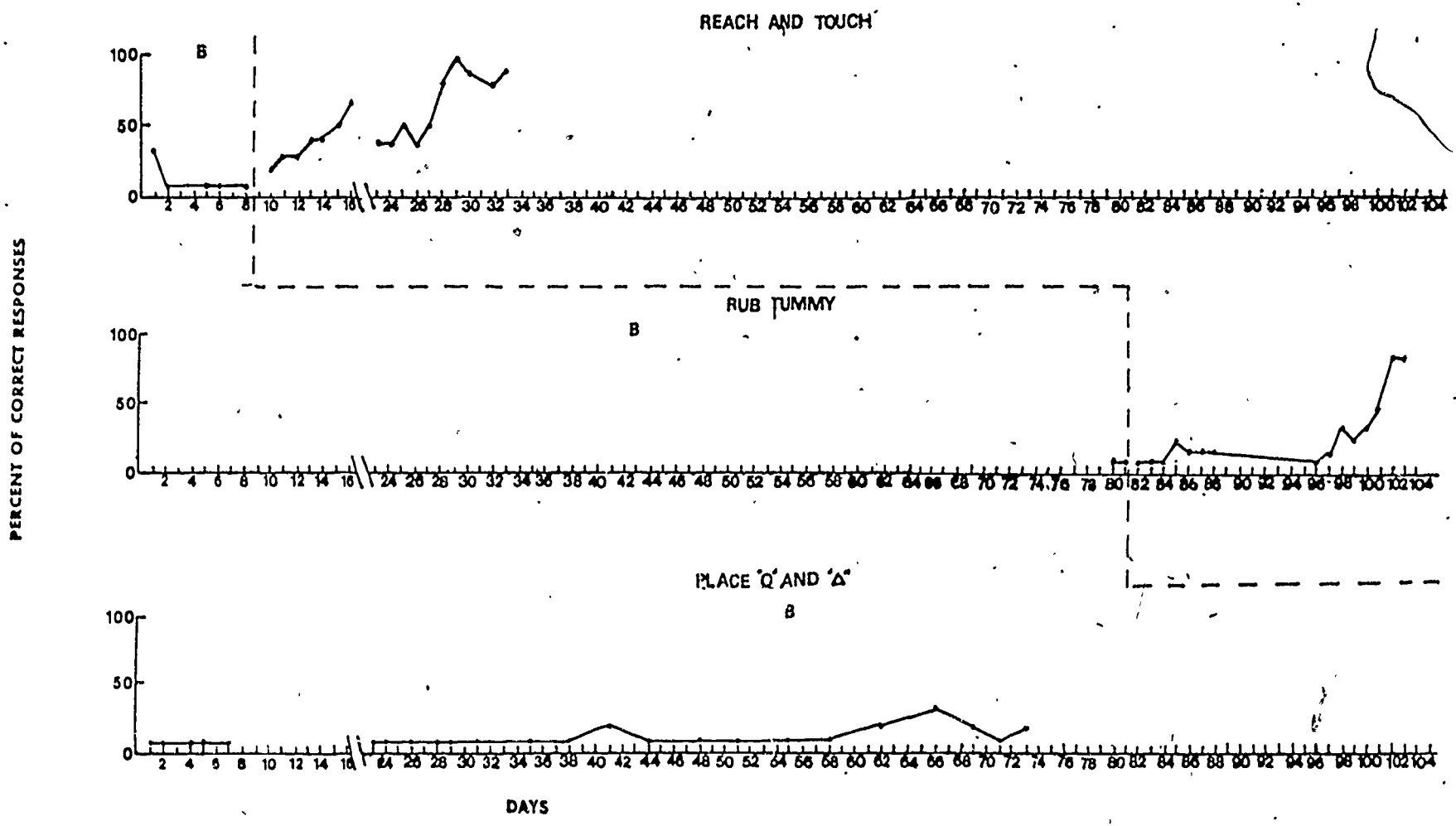
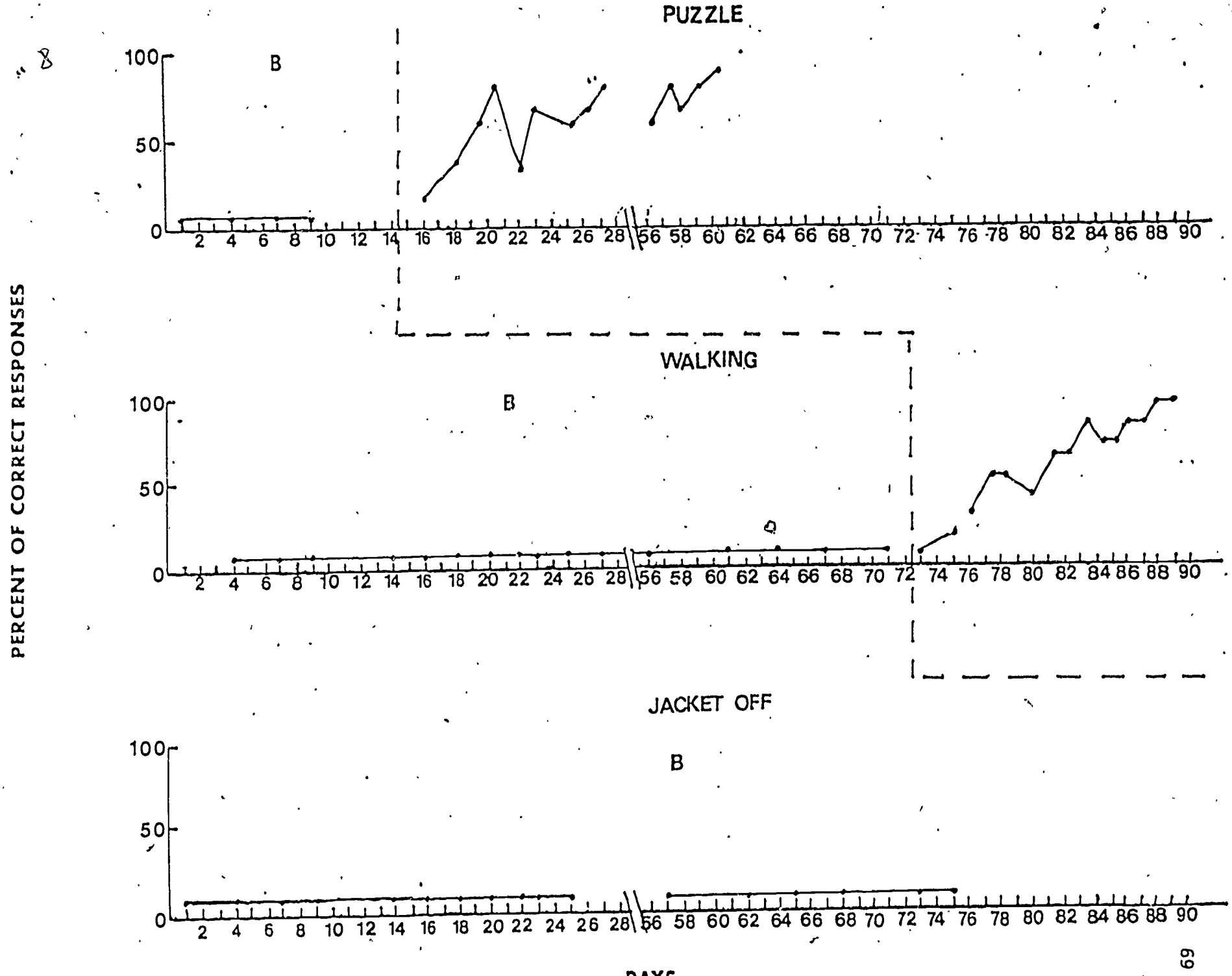

REACH AND TOUCH
B
RUB TUMMY
B
PLACE 'O' AND 'Δ'
B
PERCENT OF CORRECT RESPONSES
100
50
0
DAYS

Figure 5


PUZZLE
B
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90
WALKING
B
100
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90
JACKET OFF
B
100
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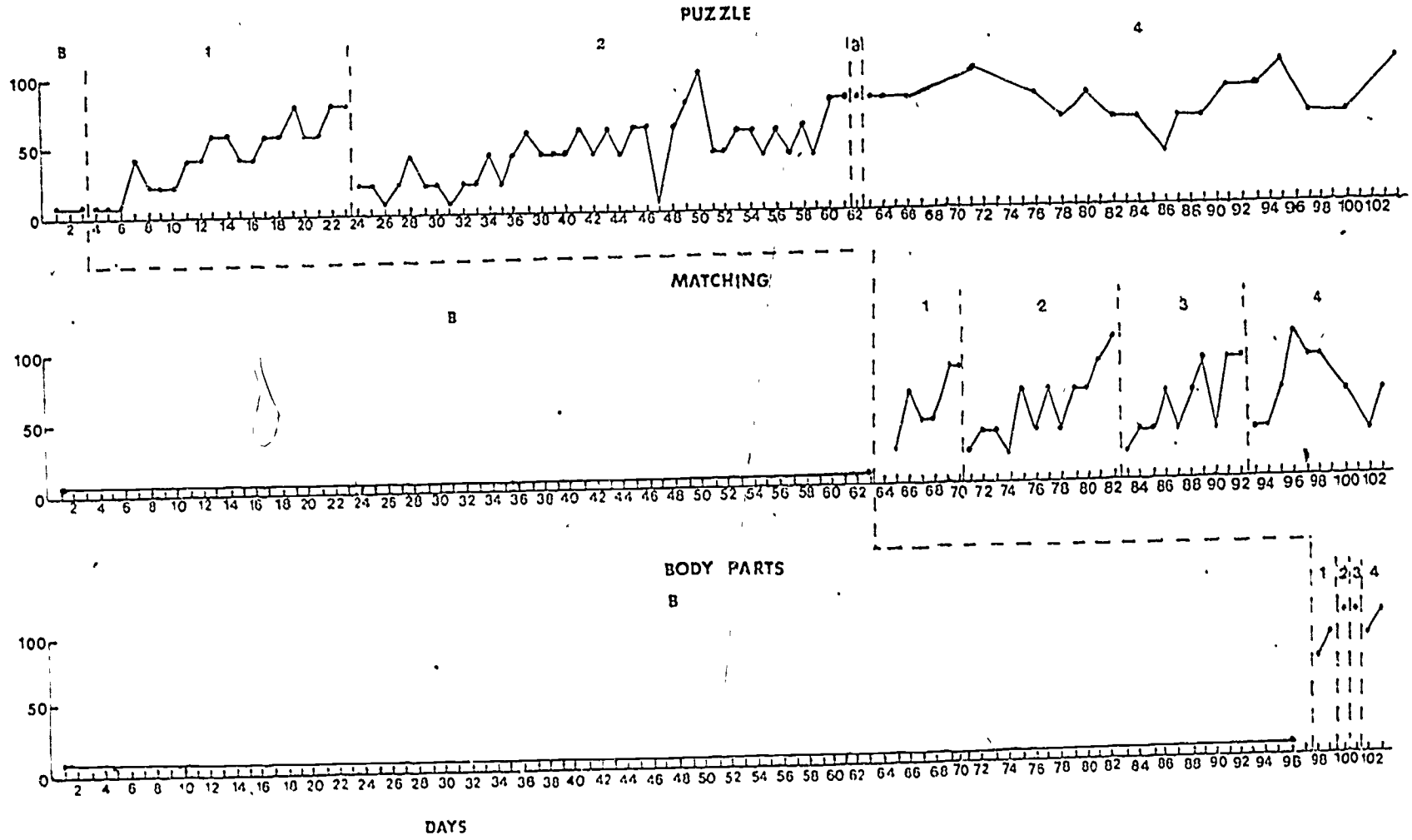
PERCENT OF CORRECT RESPONSES
DAYS

Figure 6


PUZZLE
B
1
2
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4
100
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102
MATCHING
B
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102
BODY PARTS
B
1 2 3 4
100
50
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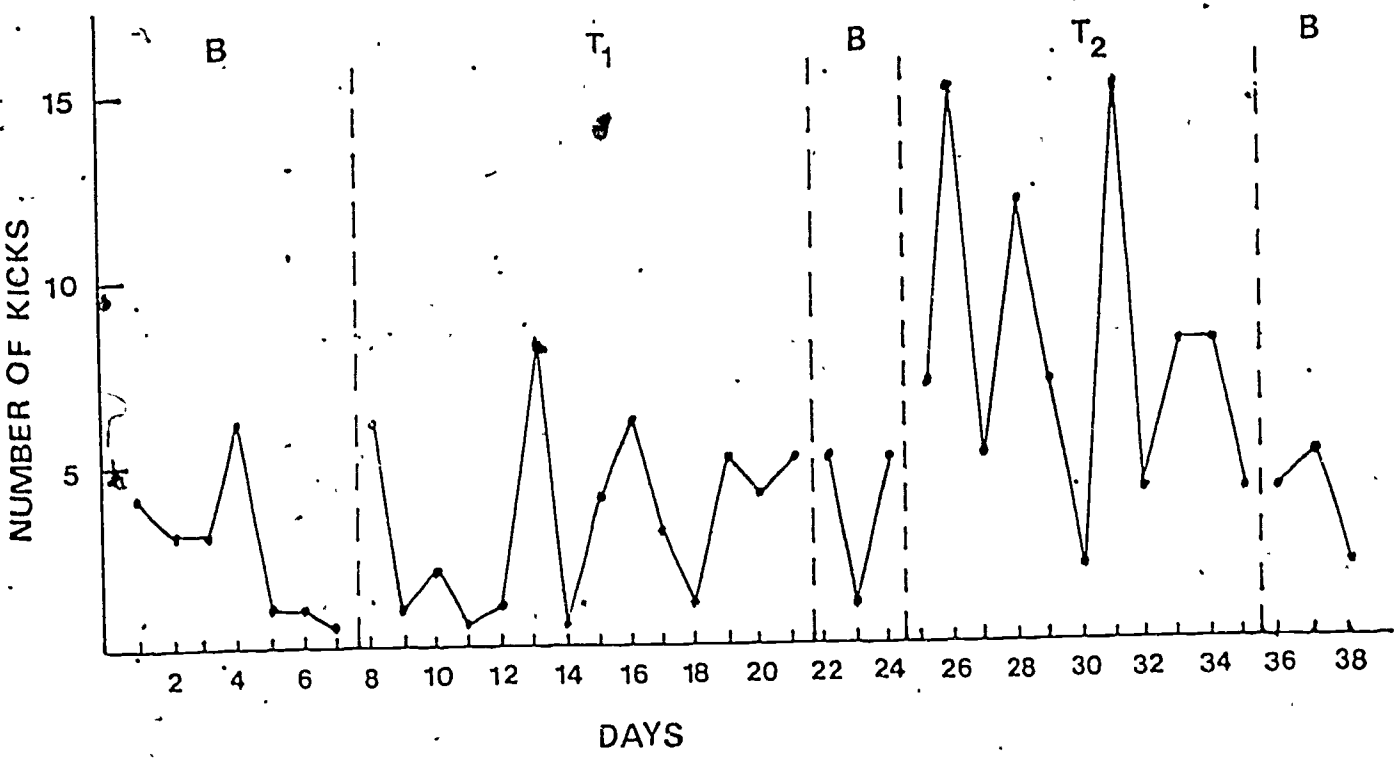
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102
DAYS
PERCENT OF CORRECT RESPONSES

Figure 7


B
T1
B
T2
B
15
10
5
NUMBER OF KICKS
2
4
6
8
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12
14
16
18
20
22
24
26
28
30
32
34
36
38
DAYS

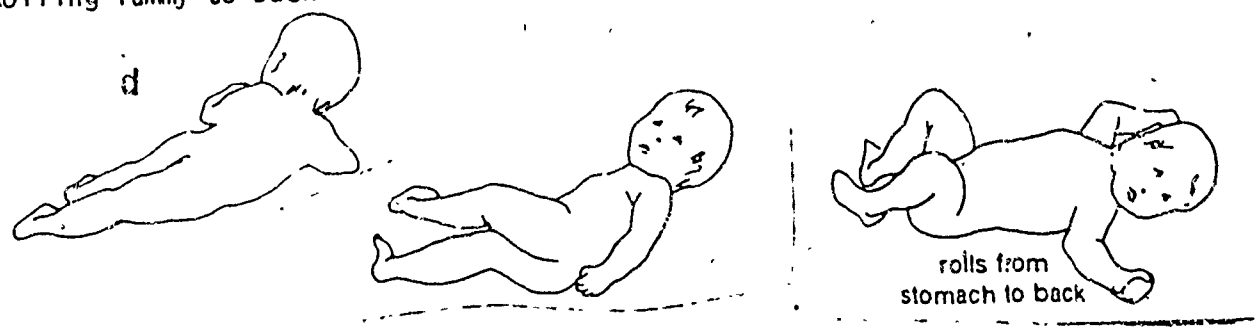
Figure 8

# Appendix A

## Curriculum Samples

# GROSS MOTOR (PRONE)

## 3. Rolling Tummy to Back




**Objective:**

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p. 78

Child will roll from stomach to back without assistance within one minute when placed on the floor with favorite object out of reach, for 80% of the trials on 2 out of 3 consecutive days.

When rolling, child should demonstrate trunk rotation by leading with either an arm or leg and allowing the rest of the body to follow in sequence.

**Materials:**

Favorite toys
Person's face and/or voice
Blanket
Large wedge

**Prerequisite:**

None

**Procedures:**

1. Position - Lying on tummy (alternative - sidelying)

2. Teaching Procedures:

   1) Entice the child to roll by dangling a toy in front of his face, then moving it to the side and behind his line of sight.
   2) Place the child on a blanket and tilt him slightly, making it easier for him to roll.
   3) Place the child on a large wedge and introduce the rolling pattern by turning his head or shoulder and guiding him through the movement. After a few repetitions, place the child back on the floor or blanket and try to secure a more active roll on the part of the child.

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17, d
p. 241

Alternative may begin in sidelying:

   1) Lay the child on his side periodically to play with a toy. Remove the toy and show the child how to return to his back by gently moving back his shoulder or hip. Place a small pillow or towel next to the child's back to help him stay in a side-lying position.
   2) Move a toy or mobile across the child's line of vision and then over his head. Encourage the child to follow the toy until he rolls over. Be sure the child rolls to both sides whenever doing this activity.

HELP
No. 3.10
p. 75

HELP
No. 3.10
p. 75

3) Place the child inside a large carpeted cylinder in side-lying position. Move the cylinder slightly to start the rolling movement to supine.
4) Place the child in side-lying on a towel. Lift one edge of the towel to start the rolling movement to supine.
5) Roll by using the shoulder to lead. One arm should be up over the child's head. Pull the opposite shoulder back. The child will assist by moving his head, trunk, and legs when he feels his arm moving. Repeat, using the other arm and helping the child roll to the opposite side.

HELP
No. 3.17
p. 77

6) Roll by using the leg to lead. Bend one hip and one knee up; the other is held straight. Gently turn the bent leg to the opposite side of the body. The child's trunk, arms, and head should follow. Repeat using the other leg.

Steps:

Hanson, D.S.
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1. Child prompted through 3/4 of roll. Flex hip and knee (be sure bottom arm is out from under child) move child past sidelying. Child rolls last 1/4 of roll independently when presented with a favorite object off to the side.
2. Child prompted through 1/2 of roll. Move child to sidelying with flexed hip and knee. Child rolls last 1/2 of roll independently when presented with a favorite object off the side.
3. Child prompted through 1/4 of roll. Flex hip and knee. Child rolls 3/4 of roll independently when presented with a favorite object off to the side.
4. Child rolls from stomach to back with only a slight prompt of nudge to begin roll when presented with a favorite object off to the side.
5. Child independently rolls from stomach to back when presented with a favorite object off to the side.

When your child gets 80% of the trials correct, on 2 out of 3 consecutive days, move on to the next step.

Criterion:

Child will roll from stomach to back without assistance within one minute when placed on the floor with favorite object out of reach for 80% of the trials on 2 out of 3 consecutive days.

Observation: Does your baby lead more with her arm or leg? Can your baby stay in a sidelying position independently? How long? What order does your baby's head, arm, chest, hips and legs roll?

Precaution:

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If the child is spastic, it is important to guard against mass thrusting movements in the rolling pattern. Make sure the child is relaxed and do the movements slowly. Allow time for the child to respond and reward him with praise, clapping, etc. if movement is performed well.

Do not use this exercise if the child arches his back, head and legs during the roll.

HELP No. 3.17 p.77

Position the child's arm out of the way, either straight up overhead or down by the side, on the side toward which he is moving.*

*This is to protect the child's shoulder.

# GROSS MOTOR (UPRIGHT)

Hanson, DS
pp. 70-71
#6

## 6. SITS, NO SUPPORT

**Objective:** Child will sit independently with no support, head and back straight, for one minute when placed in a sitting position on a firm surface, for 80% of the trials on 2 out of 3 consecutive days.

**Material:**
Favorite Toys
2-handed musical instruments
Large lightweight objects - require 2 hands, i.e., balloon, doll
Busy Box

**Prerequisite:** Sits Self-Supported by Arms and Hands

**Procedure:**

Hanson, DS
pp. 70-71
#5

1. Position - Place child in sitting position supported by arms and hands on a firm surface.

2. Teaching Procedures:

   Using the following procedures to encourage freeing up of the hands in sitting.

   1) Play ball with the child while she sits unsupported.
   2) Place the child in sitting. Let the child play with a Busy Box hung on the wall at her level.
   3) Let the child hold large objects which require two hands, e.g., a large ball, balloon or doll.
   4) Hold a toy overhead so the child must reach up with her arms.
   5) Play pat-a-cake.
   6) Let the child play two-handed musical instruments, e.g., a tambourine, triangle or rhythm sticks.

HELP
No. 3.51
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HELP
No. 3.51
p. 86

7) Let the child sit on a small box with her feet supported on the floor. Do any of the above activities.
8) Let the child sit astride a narrow seat with her feet on the floor and legs apart. Let her look at books or identify body parts in a mirror.
9) Encourage the child to keep her back straight in sitting by using one or more of the following activities:
   a) Tap and rub the base of the spine.
   b) Bounce the child gently in the sitting position.
   c) Tap the shoulders back.

Steps:

1. Child will sit self-supported with hands on knees, legs slightly apart to provide a stable sitting base.
   (a) Child sits as specified for 10 seconds.
   20 seconds.
   30 seconds.
   40 seconds.
   50 seconds.
   60 seconds.

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#6

2. Child will sit self-supported with one hand on knee, the other free to reach or play with objects. (Present a toy to encourage one hand to be free).
   (a) Child sits as specified for 10 seconds.
   20 seconds.
   30 seconds.
   40 seconds.
   50 seconds.
   60 seconds.

3. Child will sit independently with head and back straight when placed in at sitting position. (Hands free.)
   (a) Child sits as specified for 10 seconds.
   20 seconds.
   30 seconds.
   40 seconds.
   50 seconds.
   60 seconds.

When child does 80% of the trials correctly on 2 out of 3 consecutive days, move to next step.

Criterion:

Child will sit independently with no support, head and back straight, for one minute when placed in a sitting position on a firm surface for 80% of the trials on 2 out of 3 consecutive days.

Observation: Does your child startle easily? Does s/he fall over from sitting when there are loud noises or sudden movements? Can your child look freely in all directions while sitting?

Precaution: If you child arches or pushes backwards while in this position, rock him/her at shoulders side to side and bring shoulder blades gently down and forward; (may also need to press down with a flat hand on the center of their upper chest to bring head forward). If you have problems controlling this, consult your therapist.

SELF-HELP

5. Scoops food, feeds self with spoon.

Objective:

A) When a spoon with food is placed in child's hand child will bring spoon to his/her mouth, take the food off the spoon within 2 minutes of presentation of spoon, for 80% of the trials, on 2 out of 3 consecutive days.

B) When spoon is placed in tray/bowl, child will pick up spoon, scoop food from bowl, and feed him/herself 1 spoonful of food within 2 minutes of presentation of spoon, for 80% of the trials, on 2 out of 3 consecutive days.

Material: Child-sized spoon, any spoon-foods.

Procedure:

1. Position child in an upright position so that his/her arms/hands can move freely.

HELP No. 6.26(3) p. 164

2. Place the spoon in the child's hand or guide his hand to the spoon and assist his grasp if he cannot hold onto the spoon. If he shows hand preference, place the spoon in that hand.

3. Help child to bring spoon up to position as stated in objective.

4. May place spoon in child's hand and take him/her through the steps, requiring him/her to do only what is stated in objectives, e.g., show him/her how to pick up spoon, scoop and bring spoon partway to mouth.

5. If child succeeds at objective, praise child, mark (+)

6. If child does not complete objective, assist him/her. Give him/her only as much assistance as is necessary. Mark (-).

7. As you teach feeding, teach a particular step until the child is doing it independently, then move to the next step and teach it to independence and so on. Never go back and prompt your child when the child can already do something independently. For example, prompt the child to scoop the food as necessary, and then let go. Let the child perform bringing the spoon to the mouth and removing the food independently as you have already taught her/him to do. On steps you have not yet taught, completely guide the child through that step. For instance, if you have not reached Step B2 yet, merely guide the child through it - but do not provide that guidance for steps you have trained.

Hanson, D.S. p. 180

8. If child gets 80% of the trials correct, on 2 out of 3 consecutive days, go on to the next step.

Steps:

A. 1. When a spoon is placed in child's hand, child will maintain his/her grasp on spoon for at least 30 seconds. (Spoon may or may/not contain food)

2. When a spoon with food is placed in child's hand, and child is assisted in bringing spoon to mouth, child will place spoon in mouth and take the food off the spoon, within 1 minute of presentation of spoon.

3. When a spoon with food is placed in child's hand, and child is assisted in bringing spoon to:
   a) 1" from child's mouth
   b) 6" " " "
   c) 1 ft. " " "
   child will bring spoon the rest of the way, place spoon in his/her mouth and take the food off the spoon, within 1 minute of presentation of spoon.

B. 1. When a spoon with food is placed in tray/bowl, child will pick up spoon, scoop food from bowl, and feed him/herself 1 spoonful of food within 2 minutes of presentation of spoon.

2. When spoon is placed on tray/bowl, child will pick up spoon, scoop food from bowl, and feed him/herself 1 spoonful of food within 2 minutes of presentation of spoon.

For each of the above steps, use the following prompts, if necessary:
   a) maximum prompt, i.e., assist child through most of action.
   b) moderate prompt, i.e., assist child through initial part of action.
   c) mimimum prompt - i.e., tap child's hand in direction of mouth/spoon.
   d) no prompt.

Criterion:

A) When a spoon with food is placed in child's hand child will bring spoon to his/her mouth, take the food off the spoon within 2 minutes of presentation of spoon, for 80% of the trials, on 2 out of 3 consecutive days.

B) When spoon is placed on tray/bowl, child will pick up spoon, scoop food from bowl, and feed him/herself 1 spoonful of food within 2 minutes of presentation of spoon, for 80% of the trials, on 2 out of 3 consecutive days.

Suggestions:

A. To Teach Child to hold spoon:

HELP No. 6.26(1,3-5) p. 164

1. Acquaint the child with a spoon. Let him look at at, touch it, grasp it and handle it. Let him do this as you feed him with another spoon, if this does not greatly interfere with his feeding.
2. Place the spoon on the table, let him reach and grasp for it, allowing him to use whichever hand he prefers. At first, he may not use the spoon instead, he may experiment with it by banging and waving it.
3. Offer a small wooden mixing spoon, a large serving spoon, or measuring spoons during play.
4. For the older delayed child:
   a. Offer a spoon with a built-up handle if the child's grasp is weak and he has difficulty grasping a regular spoon. Wrap a layer of sponge around the spoon handle with masking tape to build up the handle or use a commercially made built-up handle spoon.
   b. Place an elastic cuff around the palm of the hand. Insert a spoon handle into the cuff. This will assist the child who is physically incapable of maintaining grasp.

B. To teach child to bring spoon to mouth:

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1. Let the child grasp the spoon with either hand. Do not insist he use the right or left hand exclusively unless he shows a strong hand preference or he definitely has better use of one hand more than the other.
2. Sit next to the child in front or behind him when assisting him. Do not stand over him.
3. Scoop a favorite food or a food which will stick to the spoon. Encourage the child to bring the spoon to his mouth to lick it.
4. Assist or guide the child in bringing the spoon to his mouth, if necessary.
5. Continue to allow the child to finger feed while he is learning to hold and use the spoon.
6. Use a spoon which will meet the child's needs:
   a. Use a child's spoon. Be sure it is not too large for the child's mouth or hand.
   b. Use a spoon with a shallow bowl if the child has difficulty removing the food from the spoon with his upper lip.
   c. Use a teflon coated spoon for the child who has a strong bite reflex. Do not use a plastic spoon since it may break.
   d. Use a child's spoon in which the bowl of the spoon turns toward the child. With this type of spoon the child need not turn his hand to bring the spoon to his mouth. Commercially made spoon of this type are sold at drug stores.

C. To teach child to scoop food; feed self with spoon:

1. Let the child experiment and practice self feeding with a spoon. Do not scold or fuss about spills or messiness. Spread newspapers, an old sheet, or a plastic sheet on the floor to catch spills. Make mealtimes as pleasant as possible and do not pressure the child to feed himself completely.
2. Help the child take over before he becomes frustrated in his efforts to feed himself. Be sure to give the child the opportunity to do as much as possible by himself.
3. Allow the child to finger feed when he gives up the spoon during the meal.
4. Assist and guide the child as necessary in inserting the spoon into the dish, scooping and bringing it to his mouth. He might remove the spoon from his mouth by tipping it upward. Mother should become less available, but still remain nearby as the child learns to be more independent.

HELP
No.6.38(2-10)
pg. 167

5. Let the child practice at the beginning of the meal when he is hungriest.
6. Use a bowl with a high edge or a "scoop plate" with a high curved edge on one side. Position the scoop plate so the higher edge is on the side toward which he is scooping.

7. Let the child use a bowl with a non-slip bottom or suction cup which will prevent the bowl from skidding around while child is trying to scoop the food.
8. Serve foods which are easy to handle with a spoon. Thin soups and rolling peas are difficult for beginners. Foods which will stick to the spoon will make scooping and retaining food on the spoon easier. Some food suggestions: Stews with mashed or chopped meats, vegetables; stews with Mashed or chopped meats, vegetables. Casserole or creamed dishes using hamburger, meats, poultry, pork, fish, vegetables which are chopped or thinly sliced. Rice may be added to make it stickier; vegetables which are mashed, chopped; macaroni and cheese; spaghetti (short noodles); cooked cereal; soft rice with chopped meats, vegetables;

Spanish rice; junior or toddler foods; mashed pumpkin, squash, sweet potato; pudding; custard; poi; cream cheese; yogurt; cottage cheese; fruit sauces; ice cream.

9. Let the child practice scooping by:
   a. Scooping wet or dry sand with a large spoon, wooden spoon, or small spoon.
   b. Scooping soap suds, shaving cream from a pan or bowl with a large or small spoon.
   c. Scooping uncooked macaroni or rice in a large box with a large spoon.

COMMUNICATION

5. Makes Sounds For Certain Objects

Objective: Child will consistently use one sound to identify or request for one particular object or person within 20 seconds of object/person presentation, for 80% of the trials, on 2 out of 3 consecutive days for a total of at least 3 objects/persons.

Materials: Favorite toys

Procedure:

A. Encourage child to vocalize for a toy.

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14h
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1. Using a toy the child is interested in, e.g., a ball, the caregiver will start the interaction with "here is the ball" and giving it to the child.
2. Give the child a few seconds to play with the object, then ask for the child to return it "give me the ball" in a friendly tone of voice.
3. After two or three exchanges with the caretaker vocalizing each time, ask the child "do you want the ball?" and wait for the child to make a vocalization.
4. Return the toy immediately upon the onset of an vocalization on the part of the baby except crying.

B. Encourage child to use specific sounds to identify specific objects.

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1. Present an object and label the object. Child repeats sound. Example: Parent shows child a ball.
   Parent says, "Ball."
   Child says, "Ba."
   Parent says, "That's right, ball."
2. If child does not respond correctly, repeat, "This is a ball. Say ball."
3. Present objects for which the child already knows the sound. Example:
   (b) for bottle or ball or bye
   (m) for mommy
   (w) for water
   (d) for daddy, drink
4. When you know the child can almost always say the sound for the object, require the child to say the sound to request an object or activity. Example: Child must say "d" before being let down.
5. Also pair sounds with different activities. Example:
   "choo-choo" with train
   "p,p" with popbeads
   "grrr" with tiger puppet
   "varoom" with toy car.
6. Praise child for repeating sound or initiating sound as case may be.

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7. Keep a record of the sounds that your child pairs with certain objects.
8. Tell family members and friends what sounds the child makes and ask them to require the child to make these sounds before getting the object or activity.
9. Be consistent. Once the child learns to make the sound, require that s/he say it all the time.
10. If child makes correct sound within 20 seconds of object presentation, mark (+). If child does not vocalize or produces incorrect response, mark (-). Repeat correct sound to child and encourage him/her to imitate you. If child imitates and gives correct sound, give child object. Wait for appropriate time to start another trial.
11. If child gets 80% of the trials correct, pick another object.

C. Encouage child to use specific sounds to identify specific people.

HELP
No. 2.29(1-4)
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1. Make sure you name yourself "Da-da," or "Daddy," "Ma-ma" or "Mommy" when you greet the child, when you pick the child up or when you call him.
2. Reward the child's correct use of a name, if he usually calls both parents or all people "Dada." Use the name of the other parent and/or people to help the child understand that each name is for a specific person.
3. Respond quickly when you are correctly named. Give the child lots of praise for being correct!
4. Show the child pictures of familiar people. Label the pictures. Encourage the child to point to whom you name and to say the names. Use large clear pictures the child can touch.

D. Encourage child to use his spetific sounds to request specific objects..

1. After child learns to consistently use a specific sound for a specifit object, encourage child to request for the object.
2. Child may indicate request by gesturing toward object. Ask child "What do you want?" If child continues gesturing, label the object, and encourage child to request for the object using the sound that he/she consistently uses for that object. If necessary, produce the first sounds of the word and encourage the child to imitate the correct response. (see step B)
3. If child spontaneously uses a sound to request for an object, make sure you respond by giving him the object, if possible.
4. Suggestions for request words:

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p. 152

| | | |
|---|---|---|
| more | cookie | down |
| potty | book | up |
| drink | go | mama/dada |

5. After child produces correct sound, repeat the correct label (eg. "ball", "bottle") back to the child so that he/she hears the correct label.

Suggestions:

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No. 2.33(1-4)
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1. Do not be concerned or worried if the child's words are difficult to understand. You can probably recognize the words by context.
2. Do not correct the child directly. Provide a good model for the word or phrase that is being mispronounced, e.g., if the infants says "poon" for "spoon" say, "That's right, that's a spoon."
3. Continue to talk to the child by naming objects in his environment, by describing his activities and your activities.
4. Do not yield to the temptation to say the word the way the child does, even if it sounds cute. The child thinks he is saying it correctly and may be confused if you mispronounce the word.

Criterion: Child will consistently use one sound to identify or request for one particular object/person, within 20 seconds of object/person presentation, for 80% of the trials, on 2 out of 3 consecutive days, for a total of at least 3 objects/persons.

# COGNITIVE

## 1. Imitates Familiar Gesture

**Objective:** Child will make the same gesture within 20 seconds of adult modeling a gesture from child's repertoire for at least 5 familiar gestures for 80% of the trials on 2 out of 3 consecutive days.

**Materials:** Toys/objects that the child is familiar with

**Procedure:**

1. Place child in comfortable position so that his/her hands are free to move.
2. Observe child in play and the behaviors he/she spontaneously performs. Choose one of these actions, according to the step child is working on.
3. Make the action a couple of times then give cue, "Do this, (child's name)" Repeat 2-3 times. Give child 20 seconds to respond.
4. If he/she produces the required response within 20 seconds, mark (+). Praise child.
5. If child does not respond correctly within 20 seconds, mark (-). Then go through the correction procedure.
6. Correction Procedure: Go through step 3 of Procedure again. If child does not respond to the prompt he/she is working on, give him/her more help (go back to previous prompt). If child responds correctly, praise child. Do not use these corrections as trials.
7. If child gets 80% of the trials correct on 2 out of 3 consecutive days, go on to next step.
8. Important: Teach activities only under appropriate conditions. For example, don't encourage blowing "raspberries" during dinner or banging the feeding spoon on the table.

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Steps:

Child will make the same gesture within 20 seconds of adult modeling:

1. A gesture/action involving an object, from child's repertoire (eg. banging 2 objects together, shaking object)
2. A gesture/ body action, not involving objects, from child's repertoire (eg. clap hands, tap knees.)

For each of above steps, go through the following prompts, depending on child's movement patterns:

a) maximum prompt (ie. prompt at elbows or shoulders through most of action)
b) moderate prompt (ie. prompt at wrist, through initial part of action)
c) minimum prompt (ie. tap at wrist or hand)
d) no prompt

Criterion:

Child will make the same gesture within 20 seconds of adult modeling a gesture from child's repertoire, for at least 5 familiar gestures, for 80% of the trials on 2 out of 3 consecutive days.

Suggestions:

HELP
No. 1.42 (1)
p. 16

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1. Observe the motor behaviors the child shows spontaneously toward objects or toys. At this time, they are behaviors such as banging an object on the table, waving an object, etc. When the child is not engrossed in any activity, perform this familiar action in front of him and then see if he makes any movement in response to you or imitates the behavior performed.

2. Choose behaviors that will be easy for the child to perform. Use some behaviors that include an object (examples: pound drum, knock over blocks, stack blocks, roll ball, shake rattle, ring bell, pat table, blow feather) and other behaviors without objects (examples: pat-a-cake, wave bye-bye, open mouth, kissing movements, raise arm, "itsy-bitsy spider," "so big" (child puts hands up to show "so big"), tongue clicks, cough).

# FINE MOTOR (OBJECT MANIPULATION)

## 8. Transfers Object

**Objective:** Child will grasp an object with one hand then transfer the object to the other hand, within 20 seconds of the 2nd object being offered, for 80% of the trials on 2 out of 3 consecutive days.

a) Right Hand to Left Hand
b) Left Hand to Right Hand

**Materials:**

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Rattles in the shape of barbells, a clutch or grasp ball, spoons, etc. Try many different objects to see which objects work best with your baby.

HELP No.4.38(3)

1. Let the child grasp the object with one hand then offer second object to the same hand.

2. Encourage child to transfer the object to the other hand in order to obtain 2nd object, by saying, "Put the _____ in the other hand" and/or "Get the _____, (child's name)."

HELP No.4.38(3) p.116

3. Help her/him transfer the first object, if necessary, then encourage her/him to grasp the second object.

4. If a child transfers the object to other hand, praise her/him and mark (+). Show her/him how to play appropriately with the 2 objects e.g., banging them together, shaking, etc.

5. If child does not transfer the object to the other hand, mark (-). Then show her/him how to do it. Praise even though you assisted her/him.

6. When child gets 80% of the trials correct on 2 out of 3 consecutive days, go on to next step.

Hint: For the 2nd object, use one of child's favorite toys (a toy you know that s/he will definitely want).

Steps:

Use the following prompt, if necessary:

a) maximum prompt (i.e., assist child with a full-hand prompt through most of the action).

b) moderate prompt (i.e., assist child at wrist, through part of the action).

c) minimum prompt (i.e., assist child at elbow, through initial part of the action).

d) no prompt.

Criterion:

Child will grasp an object with one hand then transfer the object to the other hand, within 20 seconds of the 2nd object being offered, for 80% of the trails on 2 out of 3 consecutive days.

a) Right hand to Left hand
b) Left hand to Right hand

Suggestions:

HELP
No. 4.38 (1-2, 4-5)
p.116

1. Let the child hold a long-handled toy horizontally with 2 hands. Bring the toy to a vertical position until the child releases the toy with one hand and maintains grasp of the toy with the other hand.

2. Let the child grasp an object with one hand, then help her/him transfer the same object to the other hand, if necessary.

3. Make a small ball of masking tape and let the child grasp the ball. Encourage her/him to pull the tape ball off with the other hand.

4. Place a picture sticker on the palm of the child's hand and encourage her/him to pull it off with the other hand.

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No.7

5. Play games bringing your child's hands together.

6. Give child objects that are too big to hold in one hand and must be held in both so child becomes accustomed to holding objects with both hands at midline.

# FINE MOTOR (REACH & GRASP)

19. Uses Neat Pincer Grasp

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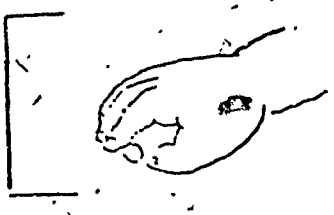
No.4.52
p. 118



The child grasps a tiny object the size of a raisin with precise thumb and index finger opposition.

Objective:

Child will independently pick up one tiny object using a pincer grasp within 20 seconds of object presentation for 80% of the trials on 2 out of 3 consecutive days.

Materials:

Use a raisin, dry cereal, other bits of food, a tiny bell, a pellet, a button, or narrowed pegs. Be sure the child does not put unsafe objects in her/his mouth.

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No. 4.52
p. 118

Procedure:

1. Place a tiny object on the table or any surface for the child to grasp one at a time.
2. Use tiny objects which do not easily roll away when the child tries to grasp them.
3. Encourage child to pick up the object, by saying, "Pick up the ____, (child's name)" or "Get the _____, (child's name)."
4. If child picks up the object using a pincer grasp within the appropriate time, praise, and mark (+). After child picks up object, show her/him the appropriate thing to do with the object, if necessary.
5. If child does not pick up the object appropriately, within the appropriate time, mark (-). Show her/him how to do it, by giving the amount of assistance needed by the child.

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No. 5.3

If necessary guide your child through the activity for a few times until the child is able to do this independently. You could begin the guiding or prompting by placing your hand entirely over your child's hand and assisting the child in picking up the object. Over time you could gradually remove the prompt or amount of guidance until you merely touch the child's arm or hand.

Praise child even if you assisted her/him through the motion. Show her/him what to do with the object when s/he has it in hand.

6. Practice this task as often as possible during the day.

7. If child gets 80% of the trials correct on 2 out of 3 consecutive days, go on to the next step.

Steps:

1. Child will pick up 1 tiny object using a pincer grasp within:

   a) 60 seconds
   b) 45 seconds
   c) 30 seconds
   d) 20 seconds,

   of object presentation.

For each of the above steps, use the following prompts, if necessary:

a) maximum prompt (i.e., assist child with a full-hand prompt through most of the action)

b) moderate prompt (i.e., assist child at wrist, through part of the action)

c) mimimum prompt (i.e. assist child at elbow, through initial part of the action)

d) no prompt

[*Precaution: a) Be sure child does not put unsafe objects in mouth.

b) An adult should be present when working on this activity.]

Criterion:

Child will independently pick up 1 tiny object using a pincer grasp within 20 seconds of object presentation for 80% of the trials on 2 out of 3 consecutive days.

Suggestions:

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No. 7.3,4

1. Present objects on a somewhat rough surface at first to make picking them up easier, then switch to a smooth surface.
2. Objects with strings and knobs also work well for this activity, such as pull toy, balloon on string, yarn, knobs on blocks, etc.
3. Place a tiny object in a cup or egg carton cup to encourage the child to grasp the object with her/his thumb and index finger.
4. Place a short, colorful piece of string on the carpet, on the table, or even on the child where s/he can easily see and reach for it by grasping with her/his thumb and index finger.
5. Provide bits of food at snack time to encourage finger feeding as well as neat pincer grasp.

HELP
No. 4.52(3-6)
p. 118

6. For the older delayed child:
   1) Let her/him make a collage using various items, such as shells, sticks, macaroni, beads, twigs, leaves, string.
   2) Let the child pinch and pull play dough with her/his thumb and index fingertips.
   3) Let the child pinch clothes pins. Let her/him remove the pins placed on the rim of a can. Let her/him drop them into the can. Then let her/him pinch and place the pins on the rim of the can her/himself. Tactfully provide assistance, if necessary.

FINE MOTOR

19. Places Circle, Square, Triangle Shapes into Form Board

Objective: When presented with a form board with a circular hole, a square hole, and a triangular hole, child will independently place the 3 shapes (circle, square, triangle) into the appropriate holes, within one minute of presentation of the shapes, for 80% of the trials, on 2 out of 3 consecutive days.

Materials: Shapes; shapebox; shape puzzle; form board.

Procedure:

1. Place child in a comfortable position, with arms and hands free to manipulate shapebox/puzzle.
2. Place shapebox so that it is easy for child to manipulate e.g. low enough so that child can see holes in which to put shapes in.
3. Present shapes in front of child. Give cue, "Put the ___ in, ___(name)_".
4. If child places the correct shape in the appropriate hole independently within the designated time limit, mark (+), and praise child.
5. If child does not place the correct shape in the appropriate hole independently, within the designated time limit, mark (-). Show child how to complete the task. Remember to praise child even if you helped her/him.
6. When doing this task, other activities to help child learn:
   i) Describe the shapes to the child.
   ii) Label the shape e.g. "circle".
   iii) Allow child to feel and play with the different shapes.
   iv) Present the shapebox at different angles so that the child is focusing on the shape of the hole and not the position of the hole.

   IMPORTANT: Do these activities after or before child is asked to do objective. This makes it less confusing for child.
7. When child gets 80% of the trials correct, on 2 out of 3 consecutive days, go on to the next step.

Steps:

A. 1. When presented with only the circular hole, child will place the circle shape into the appropriate hole, within:

a) 1 minute
b) 45 seconds
c) 30 seconds

of presentation of shape.

2. When presented with only the square hole, child will place the square shape into the appropriate hole, within:

a) 1 minute
b) 45 seconds
c) 30 seconds

of presentation of shapes.

3. When presented with a circular hole and a square hole, child will place the circle and square shape into the appropriate holes, within:

a) 2 minutes
b) 1 minute

of presentation of shapes.

4. When presented with only the triangular hole, child will place the triangular shape into the appropriate hole, within:

a) 1 minute
b) 45 seconds
c) 30 seconds

of presentation of shapes.

5. When presented with a circular hole, a square hole, and a triangular hole, child will independently place the 3 shapes into the appropriate holes, within:

a) 5 minutes
b) 3 minutes
c) 1 minute

B. For each of above steps, use the following prompts, if necessary:

a) maximum prompt (i.e. assist child with a full-hand prompt through most of task);
b) moderate prompt (i.e. assist child at wrist through part of task);
c) minimum prompt (i.e. assist child at elbow through initial part of the task;
d) None.

Criterion:

When presented with a form board with a circular hole, a square hole, and a triangular hole, child will independently place the 3 shapes (circle, square, triangle), into the appropriate holes, within one minute of presentation of the shapes, for 80% of the trials, on 2 out of 3 consecutive days.

Form Board Suggestions

A. Round Shape:

1. Let the child place small juice cans in matching holes cut in a milk carton.
2. Let the child place pegs in a pegboard.
3. Teach the child to help you put round lids on containers such as thermos bottles; dusting powder containers. (S/he cannot twist them yet.)
4. Make round indentations in the sand or dirt while at the beach or at home and let the child place rocks of the same size and shape into these indentations. Other materials which can be used for this game are bottle covers, poker chips, and circles made from foam, wood, plastic or sponge.
5. Formboards - General Suggestions:
   a) Start with one circle piece and one hole in the formboard.
   b) Start with deep holes cut into the formboard and with pieces which fit in completely. Let the child see the difference in putting it completely in, having it on the board or having it partially in.
   c) Start with a piece with a large knobbed handle. Handles can be made by gluing on small, empty spools of thread, large beads, wooden knobs, etc. Later, use smaller handles made with small pieces of wood, plastic, sponge, large screws or nails to replace the larger handles.
   d) Let the child feel the round puzzle piece and the inside edges of the formboard where the round piece fits. You may want to line parts of the puzzle with textures to aid the child.
   e) Give the child time to learn by trial and error before you begin to direct some of her/his efforts.
   f) Ask the child to put the circle back in the board after s/he has removed it. Point to the hole if the child does not respond or appear to understand. If more help is needed, show the child how to put the round piece into the hole and describe to the child what you are doing. Encourage the child to repeat your action.

HELP
No.1.71(1-6)
p.25

g) If the child cannot get into the hole and appears to be tiring or becoming frustrated, help her/him. Place you hand near the bole. The child can use your hand as a backstop and you can help slide the piece in the hold.

h) Help the child by guiding the piece in the hole by holding the piece with the child. The child need not let go of the piece as long as s/he can consistently put it in the hole.

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No.1.71(1-6)
p.25

6. Use a board or make one with one large and one small circle. Let the child try to put the pieces in correctly. Should the child place the small one in the large hole, do not say "No, that's the wrong hole" or "No, put it here." Let the child make her/his own corrections. If s/he does not correct herself/himself, point out the error in a friendly, helpful way. Encourage her/him to try again.

B. Square Shape:

1. Make square holes in the sand at the beach using square boxes, pieces of wood, blocks. Let the child put the square object into the matching hole.

2. Use a formboard with circles and squares.

3. Suggestions for making formboards out of scrap materials.

HELP
No1.86(2-4)
p.29

a) Use heavy cardboard to make a formboard. Cut out squares with a razor knife. Glue the squares together to make the puzzle piece. Glue the rest of the cardboard together to make the puzzle board. The thickness of the puzzle piece may be greater than the puzzle board.

b) Use heavy cardboard for the formboard but a different material for the shaped pieces. Inverted plastic ice cream cups and spray can covers can be used for circles. Half pint milk cartons or wood or plastic toy blocks make good squares.

c) Use styrofoam and sponge. Packing styrofoam and sponge are easily cut for appropriate shapes.

d) Use an old telephone directory for the formboard. The depth of the holes can be quickly changed by flipping the pages.

C. Triangle Shape:

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No1.I14(1-3,5)
p. 37

1. Refer to Suggestion A (Places round piece in formboard). Be sure to point out the triangle's angles and points.
2. Cut triangles out of wood, foam, sponge, plastic or find triangular boxes and containers. Take them to the beach and make triangular holes in the sand. Let the child put the triangular objects into the matching holes.
3. Use a formboard with a combination of triangles, circles and/or squares.
4. Use a formboard with three triangles of different sizes. Let the child remove the triangles from the formboard. Arrange the triangles so the correct triangle is next to the hole in which it belongs. Place the triangles at random after the child can successfully match them to the correct hole.

# PRE-ACADEMIC

3. Matches Objects to Pictures

Objective: When presented with a choice of:

a) 3 different objects (1 target object, 2 distractor objects), child will correctly point to or touch the object that matches the target picture, within 20 seconds of the verbal cue, "Find the one that's the same," for 80% of the trials, on 2 out of 3 consecutive days.

b) 3 pictures of different objects (1 target picture, 2 distractor pictures), child will correctly point to or touch the picture that matches the target object, within 20 seconds of the verbal cue, "Find the one that's the same," for 80% of the trials, on 2 out of 3 consecutive days.

Materials: Target and distractor objects and pictures. (Use simple, familiar objects, objects that the child uses in daily living.)

Procedure:

1. Present an array of objects/pictures of objects consisting of the target object/picture and the required number of distractors. (In the case of Step A1, there will be no distractor objects/pictures.) Present the objects/pictures in different positions on each trial.

2. Encourage child to watch you setting up the array, without reaching for the objects. Use cue, "Put your hands down."

3. Hold target object/picture in hand or place it in front of array. Encourage child to attend to target object/picture. You may label the object/picture for the child. Then ask child to "Find the one that's the same." (Emphasize "same".)

4. If child reaches for or points to correct match, within 20 seconds, mark (+) and praise child. Tell child "good, you found the one that's the same." May label the target object again. Show child how the object and its corresponding picture is the same.

5. If child does not reach for or point to correct match, within 20 seconds, prompt child giving only as much assistance as is needed.

Mark (-) if you had to prompt child more than the objective states.

6. Praise child even if you had to prompt her/him to respond correctly. Tell child, "Good, you found the one that's the same.". May label the target object again. Show child how the object and its corresponding picture is the same.

7. After child completes match, may work on other goals/directions that the child is learning e.g., "Give me", "Put in."

Steps:

A. 1. When presented with a choice of 1 object/picture (a target object/picture; no distractor object/picture), child will correctly point to or touch the respective object or picture that matches the target picture/object within 20 seconds of the verbal cue, "Find the one that's the same."

2. When presented with a choice of 2 objects/pictures of 2 different objects (1 target object/picture, and 1 distractor object/picture), child will correctly point to or touch the respective object or picture that matches the target picture/object, within 20 seconds of the verbal cue, "Find the one that's the same."

3. When presented with a choice of 3 objects/pictures of 3 different objects (1 target object/picture and 2 distractor objects/pictures), child will correctly point to or touch the respective object or picture that matches the target picture/object, within 20 seconds of the verbal cue, "Find the one that's the same."

B. For each of the above steps, use the following prompts, if necessary.

i) maximum prompt i.e., point to the correct object/picture and bring the child's hand to within 3 inches of the correct object/picture.

ii) moderate prompt i.e., holding down distractor picture/object and pointing to the correct match.

iii) minimum prompt i.e., pointing to the correct match.

iv) no prompt

Criterion:

When presented with a choice of:
a) 3 different objects (1 target object, 2 distractor objects), child will correctly point to or touch the object that matches the target picture, within 20 seconds of the verbal cue, "Find the one that's the same," for 80% of the trials, on 2 out of 3 consecutive days.

b) 3 pictures of different objects ( 1 target picture, 2 distractor pictures), the child will correctly point to or touch the picture that matches the target object, within 20 seconds of verbal cue, "Find the one that's the same," for 80% of the trials on 2 out of 3 consecutive days.

Suggestions:

HELP
No. 1.107
p. 35

1. Start with photographs of the objects. If they are not available find pictures which closely resemble the objects.

2. Show the child a familiar object. Name it or if the child can verbalize, let her name it. Show the child a picture of the same object. Name it or have the child name it. Show the child both the object and the picture and compare them. Talk about their sameness, point out the obvious similarities.

3. Show the child a familiar object. Then show him two pictures (one of the object, the other of a very dissimilar object). Ask her to point out the picture which matches the object.

4. Show the child a familiar picture of a familiar object. Then show him two objects (one identical to the picture, the other, very dissimilar). Ask him to give you the object which matches the picture.

5. Show the child a picture of a familiar object in the house or classroom. Have the child find the actual object in the house or classroom. Be sure it is near the child and within his reach.

# PRE-ACADEMIC

## 2. Discriminates Objects.

**Objective:**

When presented with a choice of 3 objects (a target object and 2 distractor objects), child will correctly point to or touch the target object within 20 seconds of the verbal cue, "Find the _____," for 80% of the trials on 2 out of 3 consecutive days, for a total of 10 objects.

**Material:**

Target objects, distractor objects.
Use: a) objects that are familiar to the child.
b) objects that are functional for the child i.e. objects that the child uses in her/his daily activities.

**Procedure:**

1. Present an array of objects consisting of the target object and the required number of distractor objects. (In the case of Step A1, there will be no distractor objects.) Present the objects in different positions on each trial.

2. Encourage child to watch you setting up the array, without reaching for the objects. Use cue, "Put your hands down."

3. When array is set up, ask child "Find the _____." (Emphasize label of target object.) Other cues: "Show me _____."

4. If child reaches for or points to correct object within 20 seconds, mark (+) and praise child. Tell child "Good, you found the _____" or repeat the label of the target object, e.g. "Ball." Give child an opportunity to play with the object for a short while before proceeding to next trial.

5. If child does not reach for or point to correct object independently within 20 seconds, prompt child using only as much prompting as is needed (See Step B). Mark (-) if you had to prompt child more than the objective states.

6. Praise child even if you had to prompt her/him to respond correctly. Tell child, "Good, you found the _____" or repeat the label of the target object. Give child an opportunity to play with the object for a short while before proceeding to next trial.

7. After child identifies correct object, child may work on other goals e.g. following directions, prepositions, functional object use.

8. Suggested Objects:

| | | | |
|---|---|---|---|
| cup | ball | brush | (other toys) |
| spoon | book | comb | |
| plate | doll | cookie | |
| box | crayon | chair | |

Steps:

A. 1. When presented with a choice of 1 object (a target object, no distractor objects), child will correctly point to or touch the target object within 20 seconds of the verbal cue, "Find the (target object).

2. When presented with a choice of 2 objects (a target object, and 1 distractor object), child will correctly point to or touch the target object within 20 seconds of the verbal cue, "Find the (target object).

3. When presented with a choice of 3 objects (a target object, and 2 distractor objects), child will correctly point to or touch the target object within 20 seconds of the verbal cue, "Find the (target object).

B. For each of the above steps, use the following prompts, if necessary.

i) maximum prompt (i.e. point to the correct object and bring child's hand to within 3 inches of correct object.)

ii) moderate prompt (i.e. holding down distractor object and pointing to the target object)

iii) minimum prompt (i.e. pointing to target object)

iv) no prompt

Criterion:

When presented with a choice of 3 objects (a target object and 3 distractor objects), child will correctly point to or touch the target object within 20 seconds of the verbal cue, "Find the _____.", for 80% of the trials, on 2 out of 3 consecutive days; for a total of 10 objects.

Suggestions:

HELP
No. 1.93 (1-5)
p. 31

1. Label objects for the child. Discuss things around her/him.
2. Discuss body parts and clothing when you bathe and dress the child.
3. Discuss the food, the utensils, the kitchen furniture and things when you feed the child.
4. Give the child simple directions to see if s/he knows the names of things.
5. Discuss what you routinely see when you ride the car, such as traffic lights, stop signs, trucks, buses, fire stations.

(Social)

6. Responds To Own Name

Objective: The child will turn toward a person calling his/her name from a distance of 5 feet within 10 seconds of verbal cue, for 80% of the trials on 2 out of 3 consecutive days.

Materials: None

Procedure:

1. Child should be occupied in with an activity - not attending to person calling his/her name.

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2. Always use the same name for your child. If the child's name is Jim, call him Jim and not Jimmy or Jack. It makes it easier for baby to learn his correct name.

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3. Standing several feet away from the child, call his/her name softly and observe his/her reaction.

4. If he/she does not respond, prompt by:
   a. Calling his/her name a little louder, or
   b. Pair calling his/her name with a gentle touch which guides him/her to turn his face toward the source of sound.
   c. If necessary attract the child's attention by physically turning the child toward you when you call her/his name or by using another attention-getter such as a toy. Gradually remove it until you need only say the child's name to get her/his attention.
   d. Gradually reduce the prompt so that he/she learns to respond to the sound of his/her name being called. Also allow increasing time (1 second, then 2 and 3 seconds) after calling his/her name before providing him with assistance in turning his/her head toward you.

Steps: The child will turn toward a person calling his/her name from a distance of:

1) 1 foot, within 10 seconds of verbal cue.
2) 3 feet, within 10 seconds of verbal cue.
3) 5 feet, within 10 seconds of verbal cue.

From the above steps, use the following prompts if necessary:

a) turn child's head to face parent
b) turn child's head part way
c) tap child's cheek in direction of parent
d) no prompt (independently)

Criterion: The child will turn toward a person calling his/her name within 10 seconds of verbal cue, for 80% of the trials on 2 out of 3 consecutive days.

Suggestion:

1. Call the child by name often. For example: during feeding or dressing, "Jim, raise your hands."

2. Vary your position and place in the room as well as the pitch and intensity of your voice as you call to him/her.

Appendix B

Curricular Objectives

GROSS MOTOR: Tummy (Prone)

Objectives:

1. Lifts Head to Clear Nose
Child will lift head high enough to clear nose from floor, maintain this position for 5 to 8 seconds, before turning head to one side, while lying on tummy, for 80% of the trials on 2 out of 3 consecutive days.

2. Forearm Support Lifts Head to 45° in Midline
Child will lift head at 45° angle to the floor for a duration of one minute keeping head in midline while lying on tummy with forearm support, for 80% of the trials on 2 out of 3 consecutive days.

3. Rolling Tummy to Back
Child will roll from stomach to back without assistance within one minute when placed on the floor with favorite object out of reach, for 80% of the trials on 2 out of 3 consecutive days.

4. Supporting Weight on extended arms, head 90°, Chest Off Floor
Child will lift head at 90° angle to the floor while supporting weight on open hands, straight arms and chest off floor for a minimum of 1 minute when lying on tummy for 80% of trials on 2 out of 3 consecutive days.

5. Supporting Weight on Forearms and Reaching Out with One Arm
Child placed on tummy will reach out to swipe or touch an object, within 20 seconds of object presentation while supporting self on opposite forearm, for 80% of the trials on 2 out of 3 consecutive days.

6. Child Alternates Between Forearm Support and "Arms Back" (Activity)
When lying on his stomach, the child spontaneously alternates between arching his back with his elbows bent and off the supporting surface--hands near ears, and steady support on elbows with head at 90° angle for 80% of the trials on 2 out of 3 consecutive days.

7. Locomotion Forward on Tummy Using Arms (Crawling), then Arms and Legs
Child will independently move forward, stomach on floor (moving one leg at a time in an alternating pattern) a distance of 24 inches (2 feet; 61.0 cm) within one minute after a cue is given for 80% of the trials on 2 out of 3 consecutive days.

8. Assumes Independently a Hands and Knees Position with the Tummy Off the Floor
Child will assume a hands and knees position with tummy off the floor independently within 20 seconds of verbal cue and maintain this position for 30 seconds for 80% of the trials on 2 out of 3 consecutive days.

9. Rocking Forward and Backwards in a Hands and Knees Position
Child will independently assume a hands and knees position and shift weight forwards and backwards 4-5 times for 80% of the trials on 2 out of 3 consecutive days.

GROSS MOTOR: Tummy (cont'd)

10. Plays with Toys in an Asymmetrical ½ Sitting, ½ Sidelying Position (Activity).
Child will manipulate objects placed to the side in an asymetrical half sitting, half sidelying position when presented with toys, for 80% of the trials on 2 out of 3 consecutive days.

11. Moves Forward on Hands and Knees (Creeping)
Child will independently move forward 2 feet in an alternating pattern on hands and knees (one hand and opposite knee forward, then other hand and opposite knee forward, and so on) with stomach off floor within one minute after cue is given for 80% of the trials on 2 out of 3 consecutive days.

12. Reaching with One Arm on Hands and Knees
Child will reach and touch an object at an arm's length while supporting weight on one hand and knees within 20 seconds of toy presentation for 80% of the trials on 2 out of 3 consecutive days.

13. Child Will Move Forward on Hands and Feet; "Bear Walking" (Activity)
Child will move forward on hands and feet two feet within 20 seconds of cue for 80% of the trials on 2 out of 3 consecutive days. This is also known as "plantigrade creeping" or "bear walking".

14. Child Will Creep Independently Up and Down 2-3 Stairs
Child will creep independently up and down 2-3 stair steps (about 7 inch high stair step)* for 80% of the trials on 2 out of 3 consecutive days.
*or hitches down on bottom. Hitching is scooting on bottom while sitting.

GROSS MOTOR: Back (Supine)

Objectives:

1. Turns head side to side in response to visual or auditory stimuli while lying on back.
   Child will turn head freely side to side in response to visual or auditory stimuli while on his back within 20 seconds of cue, for 80% of the trials on 2 out of 3 consecutive days.

2. Child bends and straightens arms and legs in a "kicking" motion, kicking legs alternately. (Activity)
   Child will bend and straighten arms and legs in a "kicking" motion, kicks (legs alternating) within 15 seconds of presentation of toy or an adult or spontaneously for 80% of the trials on 2 out of 3 consecutive days.

3. Child will bring her/his hand(s) to her/his mouth.
   A. Child will bring right and/or left hand to mouth spontaneously for 80% of the trials, on 2 out of 3 consecutive days.
   B. Child will bring both hands to mouth and/or midline spontaneously or within 20 seconds of presentation of toy for 80% of the trials on 2 out of 3 consecutive days.

4. Child maintains head in midline position, while on back.
   Child maintains head in midline for 60 seconds while on back for 80% of the trials on 2 out of 3 consecutive days.

5. Child will play with knees, feet in the air, while on its back.
   Child will reach and touch knees and feet in the air, while lying on his/her back within 20 seconds of physical prompt or spontaneously for 80% of the trials on 2 out of 3 consecutive days.

6. Symmetrical rolling side to side.
   Child will roll symmetrically side to side when placed in supine and recover to a midline position within 20 seconds of physical prompt or spontaneously for 80% of t trials on 2 out of 3 consecutive days.

7. Rolling back to tummy.
   Child will roll continuously from back to stomach without assistance within 30 seconds when placed on the floor surrounded by several favorite objects out of reach for 80% of the trials on 2 out of 3 consecutive days.

8. Child will lift bottom off the floor, pushing with feet flat, while on its back. (Activity).
   Child will lift hips (bottom) off the floor maintain for 20 seconds, while lying on her back and pushing with feet flat on the floor for 80% of the trials for 2 out of 3 consecutive days.

9. Child lifts head while on its back.
   Child will lift head one inch while lying on her back, within 20 seconds of presentation of an object or spontaneously for 80% of the trials on 2 out of 3 consecutive days.

GROSS MOTOR: Upright

Objectives:

1. Hold Head Steady - Held at Shoulder
   Child will hold head steady in an upright position for 20 seconds while held supported at the shoulder for 80% of the trials on 2 out of 3 consecutive days.

2. Hold Trunk Steady - Held at Hips
   Child will hold body (trunk) and head upright and steady for one minute when held at hips against adult body for 80% of the trials on 2 out of 3 consecutive days.

3. Sits Supported - Head Steady
   Child will hold head in an upright position to the body when placed in a sitting position. Child will maintain this upright position for one minute for 80% of the trials on 2 out of 3 consecutive days.

4. Sits with Minimum Support
   Child will sit for one minute with body in upright position (upper body straight, lower back rounded) when held at the hips for 80% of the trials on 2 out of 3 consecutive days.

5. Sits Self-Supported by Arms and Hands
   Child will sit independently self-supported by arms and hands for one minute when placed on firm surface, for 80% of the trials on 2 out of 3 consecutive days.

6. Sits, No Support.
   Child will sit independently with no support, head and back straight, for one minute when placed in a sitting position on a firm surface, for 80% of the trials on 2 out of 3 consecutive days.

7. Raises Self to Sitting from Back
   Child will move from lying on back or stomach to sitting by rotating toward the side, pushing up on straight arms, rotating the hips and upper legs, and straightening to sitting position within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

8. Bears Own Weight.
   Child will support body weight for one minute when held at chest, feet flat on the floor for 80% of the trials on 2 out of 3 consecutive days.

9. Stands with Minimum Support.
   Child will support own body for one minute when placed in standing position, feet flat on the floor when held at the hands by parent for 80% of the trials on 2 out of 3 consecutive days.

GROSS MOTOR: Upright (cont'd)

10. Stands at Furniture
Child will stand in an erect position with feet flat on the floor and hands on top of furniture when placed facing furniture for at least one minute for 80% of the trials on 2 out of 3 consecutive days.

11. Pulls to Stand
Child will pull self to standing by coming to kneeling, pulling to half kneeling, then to a straight standing position facing a furniture support within 20 seconds of verbal cue and maintains this position for 30 seconds for 80% of the trials on 2 out of 3 consecutive days.

12. Lowers Self from Standing to Sit
When standing by furniture for support, the child will lower self from standing to sitting position within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

13. Cruises (Walks Holding Onto Furniture)
Child will walk sideways 10 steps, while supporting her/himself at furniture, within one minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

14. Walks with Support
Child will take 5 steps forward when supported at the hands, the shoulders, or at hips, within one minute of physical cue (holding child's hands) for 80% of the trials on 2 out of 3 consecutive days.

15. Stands, No Support
Child will stand alone without support for one minute within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

16. Walks When Led by One Hand
Child will walk 5 steps forward when led by one hand within one minute of physical cue, for 80% of the trials on 2 out of 3 consecutive days.

17. Stoops and Recovers
Child will stoop to floor from standing and then raise self to standing position again within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

18. Walks Alone, No Support
Child will take 10 consecutive flatfooted steps forward within one minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

Additional Activities

A. Upright (Kneeling)
B. Upright (Standing)

## GROSS MOTOR - ADVANCED ACTIVITIES

I. Advanced Walking Skills

1. Walks Sideways (Activity)
Child will move sideways without support 3 to 4 steps in either direction; (feet are not expected to cross over) within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

2. Walks Backwards (Activity)
Child will independently walk in a backward direction for 6 feet within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

3. Pulls Toy Behind While Walking (Activity)
The child will pull a toy behind him while walking independently for a distance of 6 feet within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

4. Carries Large Toy While Walking (Activity)
The child carries a large object with one or both hands without assistance for a distance of 6 feet within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

5. Pushes and Pulls Large Toys or Boxes Around the Floor (Activity)
The child will push (pull) large toys or boxes around the floor independently for a distance of 3 feet within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

6. Stands on Tiptoes (Activity)
The child comes up on her/his toes for 10 seconds within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

7. Walks on Tip-Toes a Few Steps (Activity).
The child stands on tip-toes with hips and knees straight and takes 2 out of 3 steps forward independently within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

8. Walks on Tip-Toes Ten Feet (Activity)
The child will independently walk on tip-toes for a distance of 10 feet within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

II. Running.

9. Runs - Hurried Walk (Activity)
The child is able to walk rapidly maintaining one foot on the ground at all times. (Body is held stiffly upright with eyes fixed on the ground.) for 80% of the trials on 2 out of 3 consecutive days.

10. Runs Fairly Well (Activity)

Objective: The child is able to run independently (an activity in which neither foot is touching the ground during the same phase of the movement with the child being balanced, her/his arms and legs alternating smoothly) for 80% of the trials on 2 out of 3 consecutive days.

11. Runs and Stops Independently, Avoiding Obstacles (Activity)
The child is able to independently run and stop and avoid obstacles without falling for 80% of the trials on 2 out of 3 consecutive days.

12. Make Sharp Turns Around Corners When Running (Activity)
The child is able to turn easily when running without losing balance or falling down for 80% of the trials on 2 out of 3 consecutive days.

III. Recovery Activities

13. Squats in Play (Activity)
Child has sufficient balance to play on the floor for 2 minutes in a squatting position for 80% of the trials on 2 out of 3 consecutive days.

14. Picks Up Toy From Floor Without Falling (Activity)
Child will squat down or bend over and pick up a toy, and maintain sufficient balance to stand up again within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

15. Bends Over and Looks Through Legs (Activity)
The child is able to bend over and look through her legs for 3 seconds within 30 seconds of verbal cue (knees slightly bent as she looks backwards between the legs.) for 80% of the trials on 2 out of 3 consecutive days.

IV. Stair and Climbing Skills

16. Walks Upstairs With One Hand Held (Activity)
Child will walk upstairs while holding the hand of an adult and placing one foot up and then moving the other foot up onto the same step within one minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

17. Child Will Walk Upstairs Holding Rail - Both Feet on Step (Activity)
Child will independently walk up 5 steps holding onto a railing or wall with one hand, placing both feet on one step within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (The child's feet do not yet alternate.)

18. Child Will Walk Upstairs Alone - Both Feet on Step (Activity)
Child will independently walk up 5 steps without the use of railing or wall placing both feet on one step within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

19. Walks Downstairs With One Hand Held (Activity)
Child will walk downstairs while holding the hand of an adult and placing one foot down and then moving the other foot onto the same step within one minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

20. Child Walks Downstairs Holding Rail - Both Feet on Step (Activity).
Child will independently walk down 5 steps holding onto a railing or wall with one hand, placing both feet on one step within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (The child's feet do not yet alternate.)

21. Child Will Walk Downstairs Alone - Both Feet on Step (Activity).
Child will independently walk down 5 steps, placing both feet on one step, within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (The feet do not yet alternate.)

22. Child Will Walk Upstairs Alternating Feet (Activity)
The child will independently walk up 5 regular size stairs without the use of a railing or the assistance of an adult within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (Alternating foot pattern is now used.)

23. Walks Downstairs Alternating Feet (Activity)
The child will independently walk down 5 regular size stairs without the use of a railing or the assistance of an adult within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (Alternating foot pattern is now used.)

24. Goes Up and Down Slide (Activity)
The child will independently climb a ladder and go down the slide within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

Chair Skills

25. Climbs Into Adult Chair (Activity)
Child will climb into an adult-sized chair within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

26. Climb Forward on Adult Chair, Turn Around and Sit (Activity)
Child will climb forward onto an adult chair, turn around and sit down, within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

27. Seats Self in Small Chair (Activity)
Child will seat self in a small chair within 30 seconds of presentation of chair for 80% of the trials on 2 out of 3 consecutive days.

VI. Ball Skills - Throwing/Kicking

28. Throws Ball Overhand Landing Within Three Feet of Target (Activity)
The child, in standing position, throws a ball overhand a distance of 3 feet, within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (The ball should land within 3 feet of the target.)

29. Child Will Catch Large Ball (Activity)
The child in standing position will catch a 12" ball when the ball is thrown to him for 80% of the trials on 2 out of 3 consecutive days.

30. Child Catches Eight Inch Ball (Activity)
The child in standing position will catch an 8 inch ball when the ball is thrown to him for 80% of the trials on 2 out of 3 consecutive days.

32. Child Will Kick Ball Forward (Activity)
The child in standing position will independently kick a ball with one foot within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

33. Throws Ball Underhand in Sitting (Activity)
The child will throw the ball underhand a distance of 3 feet within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

34. Throws Ball Into A Box (Activity)
The child in standing position will throw a ball into a box which is 1 foot away within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

31. Walks Into Large Ball While Trying to Kick It (Activity)
The child, unable as yet to kick a ball, will walk toward the ball and move it forward 1 foot by bumping her/his leg or body into it when given the verbal cue "Kick the ball", for 80% of the trials on 2 out of 3 consecutive days.

VII. Balance Skills

35. Walks With Assistance On Eight Inch Board (Activity)
The child will walk at least three feet on a 8" wide balance board with someone holding her/his hand within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (The board is raised 1-2" off floor)

36. Walks Independently on Eight Inch Balance Board (Activity)
Child will walk independently 6 feet on an 8 inch balance board within 1 minute of verbal cue for 80% of the trials on 2 out of 3 consecutive days. (The board is 8 inches wide, 6 feet long and one to two inches off the floor. The child will walk the entire length without assistance.)

37. Walks Between Parallel Lines Eight Inches Apart (Activity).
Child will walk between parallel lines eight inches apart for a distance of 6 feet within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

38. Stands on One Foot With Help (Activity).
The child is able to lift up one foot and balance on the other when supported for 10 seconds for 80% of the trials on 2 out of 3 consecutive days.

39. Child Will Imitate One Foot Standing (Activity)
Child will imitate one foot standing for 1-2 seconds within 30 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

40. Tries to Stand On Two Inch Balance Beam (Activity)
The child will independently stand on a 2 inch balance beam for 10 seconds balancing only on 1 foot within 30 seconds for 80% of the trials on 2 out of 3 consecutive days.

SELF-HELP

A. Feeding

Objectives:

1. Takes Food Off Spoon
When mashed table food on a spoon is placed 1" from child's mouth, child will bring head forward and remove food from spoon by closing lips around spoon, within 20 seconds of presentation of spoon, for 80% of the trials, on 2 out of 3 consecutive days.

2. Bites Food (Activity)
Child will take one bite off a cracker/cookie held by an adult, within 20 seconds of presentation of cracker/cookie, for 80% of the trials, on 2 out of 3 consecutive days.

3. Finger-Feeds Self
Child will pick up a piece of food, place it in his/her mouth, chew and swallow the food, within 1 minute of presentation of food, for 80% of the trials, on 2 out of 3 consecutive trials.

4. Chews Food With Munching Patterns (Activity)
Child will make 5 chewing movements (jaw moves up and down) within 1 minute of presentation of food in child's mouth, for 80% of the trials, on 2 out of 3 consecutive days.

5. Scoops food, feeds self with spoon
   A. When a spoon with food is placed in child's hand child will bring spoon to his/her mouth, take the food off the spoon within 2 minutes of presentation of spoon, for 80% of the trials, on 2 out of 3 consecutive days.

   B. When spoon is placed in tray/bowl, child will pick up spoon, scoop food from bowl, and feed him/herself 1 spoonful of food within 2 minutes of presentation of spoon, for 80% of the trials, on 2 out of 3 consecutive days.

6. Uses Fork (Activity)
Child will use a fork to pierce or scoop a piece of food and bring to his/her mouth within 2 minutes of presentation of food, for 80% of the trials, on 2 out of 3 consecutive days.

B. Drinking

Objectives:

1. Coordinates Sucking, Swallowing and Breathing (Activity)
Child will suck and swallow 1 mouthful of milk from a bottle or the breast within 20 seconds of presentation of bottle or breast, for 80% of the trials, on 2 out of 3 consecutive days.

2. Holds and Drinks from Own Bottle.
Child will independently hold his/her bottle and drink at least ¼ of liquid in the bottle without dropping bottle for 80% of the trials, on 2 out of 3 consecutive days.

3. Drinks From Cup Held For Him
Child will take one mouthful of drink from a cup held by an adult, within 20 seconds of cup being brought to child's mouth, for 80% of the trials, on 2 out of 3 consecutive days.

Drinking - cont'd

4. Holds and Drinks From Cup
Child will hold a cup using one hand and take a ½ cupful of drink from the cup within 1 minute of presentation of cup, for 80% of the trials, on 2 out of 3 consecutive days.

5. Holds Cup Handle (Activity)
Child will grasp a handle or handles of a cup and maintain his/her grasp for at least 1 minute within 20 seconds of presentation of cup, for 80% of the trials, on 2 out of 3 consecutive days.

6. Pours liquid from small container (Activity)
Child will pour ½ cup of liquid from small container, within 1 minute of being given the container, for 80% of the trials on 2 out of 3 consecutive days.

C. Dressing

Objectives:

1. Cooperates with Dressing and Undressing
A. Within 1 minute of verbal cue, child will extend:
i) arms
ii) legs
into sleeves/pant legs, when adult locates hole in sleeves/pant legs for child, for 80% of the trials, on 2 out of 3 consecutive days.

B. Within 1 minute of verbal cue, child will pull:
i) arms
ii) legs
out of sleeves/pant legs, when adult holds sleeves/pant legs for child, for 80% of the trials, on 2 out of 3 consecutive days.

2. Removes Sock.
Within 5 minutes of verbal cue, child will remove both socks independently, for 80% of the trials, on 2 out of 3 consecutive days.

3. Removes Hat; Places Hat on Head (Activity)
Within 1 minute of verbal cue, child will:
A) remove a hat from his/her head independently,
B) place a hat on his/her head independently,
for 80% of the trials, on 2 out of 3 consecutive days.

4. Removes Shoes When Laces Are Undone
Within 5 minutes of verbal cue, child will remove both of his/her shoes when the laces are undone, for 80% of the trials, on 2 out of 3 consecutive days.

5. Removes A) coat/shirt; B) pullover shirt; adult assists with fasteners.
A) When given a coat/shirt that is unfastened, child will take it off independently, within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

B) When given a pullover shirt that is unfastened, child will take it off independently, within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

Dressing - continued

6. Unzips, zips large zippers (Activity)
Within one minute of verbal cue, child will (a) zip (b) unzip a large zipper at least 6 inches independently, for 80% of the trials, on 2 out of 3 consecutive days.

7. Pull pants off; adult assistance with fasteners
When child's pants are unfastened, child will independently take them off, within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

8. Puts Shoes and Socks On
A) When given 2 untied shoes and adult assistance in placing shoe on correct foot, child will put left shoe on left foot and right shoe on right foot independently, within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

B) When given a pair of socks, child will put a sock on each foot independently within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

9. Pulls Pants Up
When given a pair of pants, child will put them on independently, within 5 minutes of verbal cue, and adult will fasten the pants, for 80% of the trials, on 2 out of 3 consecutive days.

10. Puts (a) coat/shirt; (b) pullover shirt on.
When given (a) a coat/shirt, (b) a pullover shirt, child will put on garmet independently, within 5 minutes of verbal cue, and adult will fasten the garment, for 80% of the trials on 2 out of 3 consecutive days.

11. Unbuttons; Buttons Large Buttons (Activity)
A) Within 10 minutes of verbal cue, child will unbutton a shirt/coat that has large buttons and take the garmet off independently, for 80% of the trials on 2 out of 3 consecutive days.

B) Within 10 minutes of verbal cue, child will put a shirt/coat on and button the large buttons independently, for 80% of the trials on 2 out of 3 consecutive days.

D. Grooming

Objectives:

1. Washes Hands
Within 5 minutes of being asked to wash hands, child will:
a) turn faucet on;
b) wet hands;
c) soap hands;
d) rub hands together;
e) rinse hands, and
f) turn faucet off;
for 80% of the trials, on 2 out of 3 consecutive days.

2. Brushes Hair; Combs Hair
Child will hold brush/comb and make at least 3 brushing/combing actions on hair, within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

Grooming - cont'd

3. Brushes Teeth
Child will bring toothbrush to mouth, and make at least 3 brushing motions on his/her teeth, within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

4. Wipes/Blows Nose (Activity)
When given a facial tissue, child will wipe/blow his/her own nose, within 20 seconds of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

5. Use Napkin (Activity)
When given a napkin, child will use it to wipe his/her mouth or hands, within 20 seconds of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

6. Dries Hands
When given a paper towel/wash cloth, child will dry his/her hands, then dispose of paper towel independently, within 5 minutes of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

E. Toileting

1. Sits on Potty Chair or on Adaptive Seat on Toilet With Assistance (Activity)
Child will remain seated on a potty chair or on an adaptive seat on toilet for 3 minutes, when placed on the potty by an adult, for 80% of the trials on 2 out of 3 consecutive days.

2. May be toilet regulated by adult (Activity)
When placed on the potty at regular time intervals, child will eliminate in the potty within 5 minutes of being placed on the potty, for 80% of the trials, on 2 out of 3 consecutive days.

3. Anticipates Need to Eliminate on Time - May Use the Same Word for Both Functions.(Activity)
Child will indicate his/her need to eliminate verbally or by gesture, in time to use the toilet; and when taken to the toilet, will eliminate in the toilet within 5 minutes of placement on the toilet, for 80% of the trials, on 2 out of 3 consecutive days.

4. Takes Responsibility for Toileting - Requires Assistance in Wiping.(Activity).
Child will (a) indicate his/her need to eliminate verbally or by gesture; (b) go to the bathroom independently; (c) take his/her pants and/or underpants off; (d) and eliminate in the toilet within 5 minutes of placement on the toilet, with at least 80% success during the day, on 2 out of 3 consecutive days.

I. AUDITORY RESPONSE.

Objective:

1. Child's behavior changes in response to sound (Activity).
   Child will change activity level within 20 seconds of sound presentation, for 80% of the trials, on 2 out of 3 consecutive days.

2. Quiets to familiar voice (Activity).
   Child will decrease activity level within 20 seconds of hearing a familiar voice, for 80% of the trials, on 2 out of 3 consecutive days.

3. Turns head and looks to source of sound.
   When sound is presented to side, 90° from midline, within 12" from ear, child will turn head and look for sound source within 20 seconds of sound presentation, for 80% of the trials, on 2 out of 3 consecutive days.

II. RECEPTIVE LANGUAGE

Objective:

1. Responds to own name (Activity).
   Child will turn toward speaker or change activity level within 20 seconds of hearing own name called, for 80% of the trials on 2 out of 3 consecutive days.

2. Uses gestures to respond to simple requests.
   Child will respond with correct gesture within 20 seconds of a simple request, for 80% of the trials on 2 out of 3 consecutive days, for at least 5 requests.

3. Stops activity on command "No". (Activity).
   Child will stop activity for at least 5 seconds within 10 seconds of hearing the command "No", for 80% of the trials on 2 out of 3 consecutive days.

4. Follows directions.
   Child will respond correctly to a one-component direction, within 20 seconds of direction being given, for 80% of the trials, on 2 out of 3 consecutive days, for at least 5 directions.

III. EXPRESSIVE LANGUAGE.

Objective:

1. Makes new sounds (Activity)
   Child will make 1 new sound for 80% of the trials on 2 out of 3 consecutive days, for at least 5 new sounds.

2. Laughs. (Activity)
   Child will chuckle or laugh in response to a pleasurable stimuli, within 20 seconds of stimuli presentation, for 80% of the trials on 2 out of 3 consecutive days.

III. EXPRESSIVE LANGAUGE: Objectives (continued)

3. Responds to sound stimulation or speech by vocalizing (Activity).
Child will vocalize within 20 seconds of presentation of sound or speech, for 80% of the trials, on 2 out of 3 consecutive days.

4. Looks and vocalizes to his/her name (Activity).
Child will establish eye contact with speaker and vocalize within 30 seconds of hearing his/her name called, for 80% of the trials, on 2 out of 3 consecutive days.

5. Makes sounds for certain objects.
Child will consistently use one sound to identify or request for one particular object or person within 20 seconds of object/person presentation, for 80% of the trials, on 2 out of 3 consecutive days for a total of at least 3 objects/persons.

6. Apparent recognition of "own" sounds by vocalizing similar sounds.
(Uzgiris and Hunt, 1975, cited in Branston, Eng, Hunt & Vincent, 1978)

Objective:

A. Child imitates activity by making a sound.
Child will make a similar sound within 20 seconds of hearing adult imitate a sound he/she (child) just made for 80% of the trials, on 2 out of 3 consecutive days.

B. Adult initiates the activity by making a sound in child's repertoire.
Child will make a similar sound within 20 seconds of hearing adult make a sound from child's repertoire, for 80% of the trials, on 2 out of 3 consecutive days.

7. Matches familiar sounds when stimulus changes (Activity).
(Uzgiris and Hunt, 1975, cited in Branston, Eng, Hunt & Vincent, 1978)
Child will repeat a similar sound in response to adult making a sound from the child's repertoire, and change his/her sounds within 20 seconds of adult changing the stimulus sound, for 80% of the trials on 2 out of 3 consecutive days.

8. Imitates novel sounds directly.
(Uzgiris and Hunt, 1975, cited in Branston, Eng, Hunt & Vincent, 1978).
Child will imitate a new sound (not in child's repertoire) within 20 seconds of adult modeling the sound, for 80% of the trials, on 2 out of 3 consecutive days, for a total of 5 new sounds.

9. Combines gestures and vocalizations (Activity).
Child will combine his/her vocalizations with appropriate gestures within 20 seconds of presentation of desired object or verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

10. Repeats most simple new words.
(Uzgiris and Hunt, 1975, cited in Branston, Eng, Hunt & Vincent, 1978)
Child will repeat one new word within 20 seconds of adult modeling the word, for 80% of the trials, on 2 out of 3 consecutive days, for at least 5 new words.

III. EXPRESSIVE LANGUAGE: Objectives (continued)

11. Says One - Three Words (Activity).
Child will say 1 word spontaneously within 20 seconds of presentation of an activity/object/person, on 2 out of 3 consecutive days, for a total of 3 words.

12. Names one familiar object.
Child will label 1 familiar object within 20 seconds of object presentation or verbal cue, for 80% of the trials, on 2 out of 3 consecutive days, for at least 5 familiar objects.

13. Names picture of object.
Child will label one picture of a familiar object within 20 seconds of picture presentation or verbal cue, for 80% of the trials on 2 out of 3 consecutive days, for at least 5 pictures of different objects.

14. Uses own name to refer to self (Activity).
Child will respond correctly with first name within 20 seconds of verbal cue, "What is your name?" for 80% of the trials, on 2 out of 3 consecutive days.

15. Says two - three word phrase.
Child will use 1 two-three word phrase, on 2 out of 3 consecutive days, for at least 10 phrases.

16. Uses pronouns (Activity).
Child will use 1 pronoun, on 2 out of 3 consecutive days, for at least 3 pronouns.

17. Uses past tense (Activity).
Child will use 1 past tense verb, on 2 out of 3 consecutive days for at least 5 past tense verbs.

18. Answers questions appropriately.
Child will answer one question using a verbal or gestural response within 20 seconds of question being asked, for 80% of the trials on 2 out of 3 consecutive days, for at least 10 simple questions (e.g., "When", "Where", "What").

19. Uses size words (Activity).
Child will use a size word spontaneously, at least 3 times a day, for 2 out of 3 consecutive days.

20. Uses Plurals.
Child will use one plural correctly within 20 seconds of presentation of objects/pictures, for 80% of the trials, on 2 out of 3 consecutive days, for at least 5 different sets of objects/pictures.

21. Uses one preposition.
Child will use a preposition correctly within 20 seconds of presentation of objects and verbal cue, for 80% of the trials, on 2 out of 3 consecutive days, for at least 3 different prepositions.

III. EXPRESSIVE LANGUAGE: Objectives (continued)

22. Asks questions beginning with "What", "Where", "When" (Activity). Child will ask at least 3 questions beginning with "What", "Where", "When", spontaneously.

## I. VISUAL RESPONSE TO STIMULUS

Objective:

1. Child will respond with one or more of the following:
   a. glancing or looking at object
   b. eye blink
   c. cessation of activity

   within 10 seconds of presentation of visual stimuli for 80% of the trials on 2 out of 3 consecutive days.

2. Visually Follows; 90° angle.
   Child will visually follow an object continuously from midline to side and/or side to midline within 20 seconds of object presentation for 80% of the trials on 2 out of 3 consecutive days.

3. Visually Follows; 180° angle.
   Child will visually follow an object continuously from side to side, 180°, within 20 seconds of object presentation for 80% of the trials on 2 out of 3 consecutive days.

4. Visually follows; random motion.
   Child will visually follow a continuously moving object which is moved through a sequence of 3 different directions randomly, within 20 seconds of object presentation for 80% of the trials, on 2 out of 3 consecutive days.

## II. OBJECT PERMANENCE - ACTIVITIES

Objective:

1. Finds a partially hidden object (Activity).
   Child will uncover or pick up a partially covered non-symmetrical object within 20 seconds of object being covered for 80% of the trials on 2 out of 3 consecutive days.

2. Removes transparent obstacle (Activity)

   Child will remove a transparent obstacle and obtain an object which is within reach, within 20 seconds of obstacle being placed in front of object for 80% of the trials on 2 out of 3 consecutive days.

3. Anticipates visually the trajectory of a slowly moving object (Activity)
   Child will switch his/her glance from the point of disappearance of an object to the expected point of reappearance within 5 seconds of disappearance of object for 80% of the trials on 2 out of 3 consecutive days.

4. Finds Hidden Object Under a Screen (Activity)
   Child will find an object he/she sees hidden under one of three screens within 20 seconds of object being hidden for 80% of the trials on 2 out of 3 consecutive days.

5. Follows trajectory of fast moving object (Activity)
   Child will visually follow a rapidly moving or falling object after it passes behind an obstacle for 80% of the trials on 2 out of 3 consecutive days.

6. Finds hidden object under three superimposed screens.(Activity)
Child will find an object he/she sees hidden under three layers of screens placed one at a time on the object, within 20 seconds of object being hidden for 80% of the trials on 2 out of 3 consecutive days.

7. Hidden Displacement (Activity)
Child will find an object, when hidden by a series of displacements (hidden displacement), for 80% of the trials on 2 out of 3 consecutive days.

8. Functional Permanency (Activity).
Child will search for an object where it was last seen (at least 10 minutes ago), or where it is usually kept, within 20 seconds of verbal cue for 80% of the trials on 2 out of 3 consecutive days.

III. MEANS-END/CAUSALITY

Objective:

1. Overcomes obstacle to obtain object (Activity)
Child will obtain an object by reaching over or around an obstacle or by removing the barrier within 20 seconds of presentation of obstacle/barrier for 80% of the trials on 2 out of 3 consecutive days.

2. Retrieves object using other material (Activity).
Child will pull the material on which an object rests to obtain the object, within 20 seconds of object presentation for 80% of the trials on 2 out of 3 consecutive days.

3. Moves to obtain object that is out of reach (Activity).
Child will move self to obtain an object that is out of reach (less than 5 feet away), but still visible, within 30 seconds of object being moved for 80% of the trials on 2 out of 3 consecutive days.

4. Pulls string horizontally to obtain object (Activity).
Child will move self to obtain an object that is out of reach (less than 5 feet away), but still visible, within 30 seconds of object being moved for 80% of the trials on 2 out of 3 consecutive days.

5. Pulls string vertically to obtain object (Activity).
Child will pull upward on a string to obtain an object attached to the string, within 20 seconds of object being lowered beneath a barrier for 80% of the trials on 2 out of 3 consecutive days.

6. Uses tool to obtain desired object (Activity)
Child will use an unrelated object to obtain a desired object, within 30 seconds presentation of desired object for 80% of the trials on 2 out of 3 consecutive days.

7. Activation of toy (Activity).
   A. Child will hand toy to adult to reactivate, within 20 seconds of toy ceasing its action for 80% of the trials on 2 out of 3 consecutive days.
   B. Child will look for and succeed in activating a toy (although he/she did not see toy activated) within 1 minute of toy presentation for 80% of the trials on 2 out of 3 consecutive days.

IV. MOTOR IMITATION

Objective:

1. Imitates familiar gesture.
   Child will make the same gesture within 20 seconds of adult modeling a gesture from child's repertoire, for at least 5 familiar gestures, for 80% of the trials on 2 out of 3 consecutive days.
2. Imitates a novel body movement that child can see him/herself perform.
   Child will repeat modeled body action, within 20 seconds of adult modeling a body movement, not in child's repertoire, for at least 5 novel body movements for 80% of the trials on 2 out of 3 consecutive days.
3. Imitates "invisible" (facial) gestures.
   Child will make the same facial gesture within 20 seconds of adult modeling the facial gesture, for at least 5 facial gestures for 80% of the trials on 2 out of 3 consecutive days.
4. Imitates 2-action combinations.
   Child will repeat a 2-action combination within 20 seconds of adult modeling the actions, for at least five 2-action combinations for 80% of the trials on 2 out of 3 consecutive days.
5. Deferred imitation (Activity).
   Child will repeat an action that was seen at least 10 minutes prior to the time the child performs the action for 80% of the trials on 2 out of 3 consecutive days.

V. SPATIAL RELATIONSHIPS

Objective:

1. Looks from one object to another (Activity).
   Child will look briefly at one object then another object when both are held within his visual field, within 20 seconds of presentation of object for 80% of the trials on 2 out of 3 consecutive days.
2. Turns Object to "right side" (Activity)
   Child grasps object, which has a definite front and back or top and bottom, and turns it to the "right side", within 20 seconds of object presentation for 80% of the trials on 2 out of 3 consecutive days.
3. Simple detour (Activity).
   Child will go around obstacles to obtain a desired object, within 1 minute of losing desired object for 80% of the trials on 2 out of 3 consecutive days.

FINE MOTOR - Reach & Grasp

Objectives:

1. Moves Arm Symmetrically (Activity)
Child will move his/her arms together with random movements to the side, at least 2 times, within 20 seconds of object being presented in child's visual field, for 80% of the trials on 2 out of 3 consecutive days.

2. Brings Hands to Midline in Supine Position
Child will independently bring (a) left, (b) right hand to a midline position and hold this position for 3 seconds, within 20 seconds of toy presentation, while lying on her/his back, for 80% of the trials on 2 out of 3 consecutive days.

3. Opens Hand, Indwelling Thumb No Longer Present (Activity)
Child will keep his/her hand open for at least 5 seconds with thumb no longer held in his/her hand, within 20 seconds of physical prompt*, for 80% of the trials on 2 out of 3 consecutive days.

4. Grasps Toy Actively
Child will maintain his/her grasp on object using (a) left hand (b) right hand, for at least 30 seconds, within 20 seconds of object being placed in child's hand; for 80% of the trials on 2 out of 3 consecutive days.

5. Reaches Toward Toy Without Grasping
Child will reach and touch object presented at arm's length, at midline, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

6. Clasps Hands
Child will independently grasp her/his own hands at midline or play with her/his fingers for at least 5 seconds, within 20 seconds of tap at elbows or verbal cue, for 80% of the trials on 2 out of 3 consecutive days.

7. Keeps Hands Open 80% of the Time (Activity)
Child will keep his/her hands open and not fisted at least 80% of 10 one-minute trials on 2 out of 3 consecutive days.

8. Uses Palmar Grasp (Activity)
Child will grasp an object against the palm without use of the thumb, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

9. Reaches for Object Bilaterally, i.e., with both arms
Child will reach with both arms and grasp an object presented at arm's length, at midline, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

10. Uses Radial Palmar Grasp (Activity)
Child will grasp an object with her/his thumb, index and middle fingers against her/his palm, within 20 seconds of object presentation, for 80% of the trials, on 2 out of 3 consecutive days.

FINE MOTOR - Reach & Grasp (continued)

11. Holds Arm Out When Anticipating Being Picked Up
Child will lift arms up at least 5 inches to indicate that s/he wants to be picked up, within 20 seconds of verbal cue, for 80% of the trails on 2 out of 3 consecutive days.

12. Reaches for Object Unilaterally, i.e., using one arm
Child will reach for object with (a) left arm (b) right arm and grasp an object presented at arm's length, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

13. Approaches Second Object While Still Holding First (Activity)
Child will reach for second object while holding first object, within 20 seconds of presentation of second object, for 80% of the trials, on 2 out of 3 consecutive days.

14. Attempts to Secure Tiny Object (Activity)
Child will attempt to grasp a pellet-sized object from table/floor, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

15. Reaches and Grasps Object, crossing midline
Child will reach across midline with (a) left hand (b) right hand, and grasp object presented 45° from midline to the side, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

16. Rakes Tiny Object
Child will pick up a tiny object using a raking motion within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

17. Uses Radial Digital Grasp (Activity)
Child will grasp an object with the thumb, index and middle finger without the use of the palm, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

18. Uses Inferior Pincher Grasp (Activity)
Child will grasp a small object with her/his index finger and thumb (thumb is positioned at the lateral or lower part of the index finger), within 20 seconds of object presentation, for 80% of the trials, on 2 out of 3 consecutive days.

19. Uses Neat Pincer Grasp
Child will independently pick up one tiny object using a pincer grasp within 20 seconds of object presentation for 80% of the trials on 2 out of 3 consecutive days.

FINE MOTOR - Object Manipulation

Objective:

1. Begins Play with Rattle/Toy.
   Child will shake or appropriately manipulate toy at least 3 times within 20 seconds of being given the toy for, 80% of the trials on 2 out of 3 consecutive days.

2. Holds an Object and Brings It to Mouth.
   Child will hold an object and bring it to mouth, within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

3. Use Hands and Mouth for Sensory Exploration of Objects (Activity)
   Child will manipulate an object using at least 2 different actions within 5 minutes of object presentation, for 80% of the trials, on 2 out of 3 consecutive days.

4. Regards Tiny Object (Activity)
   The child looks at an object the size of a pellet raisin for 1 second within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

5. Looks at Distant Object (Activity)
   Child will look at an object that is at least 5 feet from child, for at least 1 second, within 20 seconds of verbal cue or object presentation, for 80% of the trials on 2 out of 3 consecutive days.

6. Picks Up Dropped Object
   Child will pick up an object that is anywhere within reach using (a) left hand; (b) right hand, within 20 seconds of object being presented or dropped, for 80% of the trials, on 2 out of 3 consecutive days.

7. Retains Small Object in Each Hand
   Child will hold a small object in each hand simultaneously for at least 10 seconds, within 20 seconds of toy presentation, for 80% of the trials on 2 out of 3 consecutive days.

8. Transfers Object
   Child will grasp an object with one hand then transfer the object to the other hand, within 20 seconds of the 2nd object being offered, for 80% of the trials on 2 out of 3 consecutive days.

9. Bangs Object on Table (Activity)
   Child will bang/hit an object on a table or any hard surface at least 3 times within 20 seconds of object presentation, for 80% of the trials on 2 out of 3 consecutive days.

10. Manipulates Toy Actively with Wrist Movements (Activity)
    The child grasps, explores and manipulates a toy using at least 3 active rotary wrist movements, within 20 seconds of object presentation, for 80% of the trials, on 2 out of 3 consecutive days.

Fine Motor - Object Manipulation (continued)

11. Bangs 2 Objects Together
Child will bang/hit 2 objects together at least 3 times within 20 seconds of having the 2 objects in her/his hands, for 80% of the trials, on 2 out of 3 consecutive days.

12. Removes Pegs From Pegboard
Child will take 5 small pegs out of a pegboard independently within one minute of presentation of pegs, for 80% of the trials on 2 out of 3 consecutive days.

13. Extends Wrist (Activity)
Child will extend her/his wrist while manipulating objects within one minute of object presentation, for 80% of the trials, on 2 out of 3 consecutive days.

14. Takes Objects Out of Container (Activity)
Child empties or removes at least 3 objects from a container by dumping it over or by taking out the objects one by one, within one minute of container presentation, for 80% of the trials on 2 out of 3 consecutive days.

15. Pokes with Index Finger (Activity)
Child will isolate her/his index finger to poke or feel an object within 20 seconds of verbal cue or object presentation, for 80% of the trials, on 2 out of 3 consecutive days.

16. Puts Object into Container
Child will place at least one small object into a small container, within 20 seconds of verbal cue or presentation of objects, for 80% of the trials, on 2 out of 3 consecutive days.

17. Stack Rings
A) Child will remove 6 rings from a ring stack, within one minute of verbal cue or presentation of rings, for 80% of the trials, on 2 out of 3 consecutive days.
B) Child will place 6 rings on a ring stack in any order, within one minute of verbal cue or presentation of rings, for 80% of the trials, on 2 out of 3 consecutive days.

18. Places at Least 6 Round Pegs in Pegboard.
Child will place at least 6 round pegs in a pegboard, within one minute of verbal cue or presentation of pegs, for 80% of the trials, on 2 out of 3 consecutive days.

19. Places Circle, Square, Triangle Shapes into Form Board
When presented with a form board with a circular hole, a square hole, and a triangular hole, child will independently place the 3 shapes (circle, square, triangle) into the appropriate holes, within one minute of presentation of the shapes, for 80% of the trials, on 2 out of 3 consecutive days.

20. Builds Tower Using 8 Cubes
Child will build a tower of 8 cubes, placing one cube over another, within 2 minutes of verbal cue, or presentation of blocks, for 80% of the trials, on 2 out of 3 consecutive days.

Fine Motor - Object Manipulation (continued)

21. Strings 3 One-inch Bead (Activity)
Child will string at least 3 one-inch beads with a heavy corded string, within 5 minutes of presentation of beads, for 80% of the trials on 2 out of 3 consecutive days.

22. Puts Tiny Object into Small Container
Child will place at least one tiny object into a small container, within 20 seconds of verbal cue or presentation of objects, for 80% of the trials, on 2 out of 3 consecutive days.

23. Snips with Scissors (Activity)
Child will make at least 3 discreet snips with the scissors, within one minute of verbal cue and presentation of materials, for 80% of the trials on 2 out of 3 consecutive days.

24. Imitates Adult drawing lines, circles, crosses
Child will imitate the following strokes within 20 seconds of adult modeling the stroke; for 80% of the trials on 2 out of 3 consecutive days.

25. Places 6 Square Pegs in Pegboard.
Child will place 6 square pegs in a pegboard, within 2 minutes of verbal cue or presentation of pegs, for 80% of the trials, on 2 out of 3 consecutive days.

26. Completes (A) Non-interlocking puzzle (B) Interlocking Puzzle.
(A) Child will independently complete a five piece non-interlocking puzzle; for 80% of the trials, on 2 out of 3 consecutive days.
(B) Child will complete 3-4 piece interlocking puzzle, for 80% of the trials, on 2 out of 3 consecutive days.

27. Stacks Rings in Correct Order (Activity)
Child will independently stack at least 6 rings in the correct order, within 5 minutes of presentation of ring stack, for 80% of the trials, on 2 out of 3 consecutive days

28. Imitates Three Block Bridge using cubes (Activity)
Child will build a bridge using three cubes (one-inch) within one minute of adult modelling the bridge for 80% of the trials, on 2 out of 3 consecutive days.

I. DISCRIMINATION

A. Matching.

Objectives:

1. Matches Objects
When presented with a choice of 3 different objects (target object, 2 distractor objects) child will correctly point to or touch the object that matches the target object, within 20 seconds of verbal cue, "Find the one that's the same", for 80% of the trials, on 2 out of 3 consecutive days.

2. Matches Sounds to Animals (Activity)
   A. Child will vocalize correct sound, within 20 seconds of question, "What does the (animal) say?", for 80% of the trials, on 2 out of 3 consecutive days; for at least 5 animals.
   B. Child will point to correct animal (for a choice of 3) within 20 seconds of question, "What goes (animal sound)?", for 80% of the trials, on 2 out of 3 consecutive days; for at least 5 animals.

3. Matches Objects to Pictures
When presented with a choice of : a) 3 different objects (1 target object, 2 distractor objects), child will correctly point to or touch the object that matches the target picture, within 20 seconds of the verbal cue, "Find the one that's the same", for 80% of the trials, on 2 out of 3 consecutive days.

When presented with a choice of : b) 3 pictures of different objects (1 target picture, 2 distractor pictures), child will correctly point to or touch the picture that matches the target object, within 20 seconds of the verbal cue, "Find the one that's the same", for 80% of the trials, on 2 out of 3 consecutive days.

4. Matches Sounds to Pictures of Animals (Activity)
   A. Child will vocalize correct sound, within 20 seconds of question "What does the (animal) say?", for 80% of the trials, on 2 out of 3 consecutive days; for at least 5 animal pictures.
   B. Child will point to correct animal picture (from a choice of 3), within 20 seconds of question "What goes (animal sound)?", for 80% of the trials, on 2 out of 3 consectuive days; for at least 5 animals.

5. Matches Shapes - Circle, Triangle, Square (Toys)
When presented with a circular shape, a triangular shape and a square shape, child will correctly point to or touch the shape that matches the target shape, within 10 seconds of the verbal cue, "Find the one that's the same," for 80% of the trials on 2 out of 3 consecutive days.

I. DISCRIMINATION

A. Matching - continued

6. Sorts Objects
Child will sort at least 20 objects into 4 groups, each group/set containing at least 5 identical objects, within 5 minutes of verbal cue, "Sort the _____", for 80% of the trials on 2 out of 3 consecutive days.

7. Matches Identical Simple Pictures of Objects
When presented with a choice of 3 pictures of different objects (target picture, 2 distractor pictures), child will correctly point to or touch the picture that matches the target picture, within 20 seconds of verbal cue, "Find the one that's the same", for 80% of the trials, on 2 out of 3 consecutive days.

8. Sorts Pictures
Child will sort at least 20 pictures into 4 groups, each group/set containing at least 5 identical pictures, within 5 minutes of verbal cue, "Sort the _____", for 80% of the trials, on 2 out of 3 consecutive days.

9. Matches Primary Colors, and Black and White
When presented with 3 colors, child will correctly point to or touch the color that matches the target color, within 20 seconds of the verbal cue, "Find the one that's the same", for 80% of the trials, on 2 out of 3 consecutive days.

10. Matches Similar Pictures of Objects
When presented with at least 20 pictures (4 object sets, with 5 similar pictures of the same object in each set), child will sort the pictures into 4 sets of pictures of the same object, within 10 minutes of the verbal cue, "Find all the pictures of _____", for 80% of the trials, on 2 out of 3 consecutive days.

11. Sorts Shapes - Circle, Triangle, Square
_____ will sort at least 15 shapes into 3 sets, each set containing at least 5 similar (but not identical) shapes, within 5 minutes of verbal cue, "Sort the _____", for 80% of the trials, on 2 out of 3 consecutive days.

12. Matches Pictures of Shapes
When presented with a choice of 3 pictures of different shapes (1 target shape, 2 distractor shapes), child will correctly point to or touch the shape that matches the target shape, within 20 seconds of verbal cue, "Find the one that's the same", for 80% of the trials, on 2 out of 3 consecutive days.

13. Sorts Colors
Will sort at least 20 objects into 4 sets, each set containing at least 5 objects identical except for color within 5 minutes of verbal cue, "Sort the _____", for a total of 6 different colors, for 80% of the trials, on 2 out of 3 consecutive days.

I. DISCRIMINATION

B. Discrimination

Objectives:

1. Looks for Family Members or Pets When Named; Recognizes Several People in Addition to Immediate Family.
Child will identify named person by looking toward or pointing to the person within 20 seconds of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days; for at least 3 family members and 2 people in addition to immediate family.

2. Discriminates Objects
When presented with a choice of 3 objects (a target object and 2 distractor objects), child will correctly point to or touch the target object within 20 seconds of the verbal cue, "Find the _____," for 80% of the trials on 2 out of 3 consecutive days, for a total of 10 objects.

3. Indicates Two Objects From Group of Familiar Objects (Activity).
Child will point to, touch, or pick up two different objects at the same time out of a group of three to five objects within 20 seconds of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days.

4. Identifies Self.
Child will identify self by pointing to self or mirror image, within 20 seconds of verbal cue, for 80% of the trials on 2 out of 3 consecutive days.

5. Identifies at Least 6 Body Parts
Child will identify 1 body part on self/doll by pointing or touching the part named, within 20 seconds of verbal cue, for 80% of the trials on 2 out of 3 consecutive days; for a total of 6 body parts.

6. Brings Objects from Another Room on Request (Activity).
Child will bring an object from another room within 1 minute of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days; for a total of 5 objects.

7. Recognizes and Points to Animal Pictures.
When presented with a choice of 3 animal pictures (1 target picture, 2 distractor pictures), child will correctly point to or touch the target pictures within 20 seconds of verbal cue, "Find the (target animal)", for 80% of the trials on 2 out of 3 consecutive days.

8. Points to Distant Objects Outdoors.(Activity)
Child will point in direction of named object, within 20 seconds of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days; for at least 5 objects.

9. Points to Several Clothing Items on Request.
When presented with a choice of 3 pieces of clothing (1 target, and 3 distractors), child will correctly point to or touch the target clothing within 20 seconds of the verbal cue, "Find the (target clothing)", for 80% of the trials on 2 out of 3 consecutive days.

I. DISCRIMINATION

B. Discrimination - continued

10. Recognizes Self in Photograph (Activity).
When presented with a choice of 2 photographs, child will point to or pick her/his own photograph within 20 seconds of verbal cue, "Find (target object)", for 80% of the trials on 2 out of 3 consecutive days.

11. Find Her/His Own Belongings From Others (Activity).
When presented with a choice of 3 sets of belongings (e.g., clothes, shoes), child will correctly pick out her/his own within 20 seconds of verbal cue, "Find your (target object)," for 80% of the trials on 2 out of 3 consecutive days.

12. Points to Pictures of Familiar Objects and People, i.e., Discriminates Pictures of Objects and People.
When presented with a choice of pictures of 3 different objects of people (a target picture and 3 distractor pictures), child will correctly point to or touch the target picture within 10 seconds of verbal cue, "Find the (target object)", for 80% of the trials on 2 out of 3 consecutive days.

13. Identifies Rooms in Own House (Activity).
Child will go to or point to a room in her/his house, within 1 minute of verbal cue, for 80% of the trials, on 2 out of 3 consecutive days; for at least 3 different room

14. Identifies Clothing Items for Different Occasions (Activity).
When presented with a choice of 3 clothing items, child will pick out appropriate clothing within 20 seconds of verbal cue: "What do you wear when you____?", for 80% of the trials on 2 out of 3 consecutive days.

15. Recognizes Familiar Adult in Photograph (Activity).
When presented with a choice of 3 photographs, child will point to correct picture within 10 seconds of verbal cue "Find (adult's name)", with 80% accuracy, on 3 consecutive days.

16. Understanding of Prepositions.
Within 20 seconds of the cue "Put/Take the object preposition the container/furniture", the child will pick the object up and place it in the correct position, for 80% of the trials, on 2 out of 3 consecutive days.

17. Selects Pictures Involving Action Words.
When presented with a choice of 3 action pictures, child will point to correct picture within 20 seconds of verbal cue, "Show me the girl/boy ____", for 80% of the trials on 2 out of 3 consecutive days, for at least 5 action pictures.

18. Knows Own Sex of Others (Activity).
When presented with 2 choices, child will pick out the girl/boy within 20 seconds of verbal cue "Which one is a (girl/boy)?", for 80% of the trials on 2 out of 3 consecutive days.

I. DISCRIMINATION

B. Discrimination - continued

19. Identifies Familiar Objects by Touch (Activity).
When presented with a choice of 3 objects that are covered, child will find the correct object by touching, within 20 seconds of verbal cue, "Find the _____", for 80% of the trials on 2 out of 3 consecutive days; for at least 5 objects.

20. Discriminates Several Colors.
When presented with a choice of 3 pictures of identical objects except for color (1 target color, 2 distractors), child will correctly point to or touch the picture of the target color, within 20 seconds of the verbal cue, "Find the (target color)(object name)," for 80% of the trials on 2 out of 3 consecutive days; for at least 5 colors.

21. Discriminates 3 Shapes.
When presented with 3 objects identical except for shape (1 target shape, 2 distractor shapes), child will correctly point to or touch the target shape, within 20 seconds of verbal cue; for 80% of the trials on 2 out of 3 consecutive days; for a total of 3 shapes.

## II. CLASSIFICATION

### A. Function

#1 Demonstrates Use of Objects

#2 Identifies Objects With Their Use

### B. Attributes

#1 Understands Concept of One

#2 Gives One Out of Many

#3 Points to Larger or Smaller of 2 Objects

#4 Understands Concept of Two

#5 Points to Longer of 2 Objects

#6 Points to Longer of 2 Lines

## II. CLASSIFICATION

### A. Function

Objectives:

1. Demonstrates Use of Objects
Child will demonstrate functional use of 1 object, using appropriate gestures, within 20 seconds of verbal cue, "What do you do with ____?" for 80% of the trials on 2 out of 3 consecutive days; for at least 10 objects.

2. Identifies Objects With Their Use.
When presented with a choice of 3 objects, child will pick out correct object, within 20 seconds of verbal cue "What do you (function)?" for 80% of the trials on 2 out of 3 consecutive days; for at least 5 objects.

### B. Attributes

1. Understands Concept of One.
Child will point to a set of one out of a choice of 3 sets, within 20 seconds of verbal cue, "Find one ____" for 80% of the trials for 2 out of 3 consecutive days.

2. Gives One Out of Many (Activity)
When presented with at least 5 objects, child will pick out one within 20 seconds of verbal cue, "Get one (object name)" for 80% of the trials on 2 out of 3 consecutive days.

3. Points to Larger or Smaller of 2 Objects
When presented with 2 objects that are identical except for size, child will point to the correct object within 20 seconds of verbal cue, "Find the small (object name)" for 80% of the trials on 2 out of 3 consecutive days.

4. Understands Concept of Two
Child will point to a set of 2 out of a choice of 3 sets, within 20 seconds of verbal cue, "Find 2 (object name)" for 80% of the trials on 2 out of 3 consecutive days.

5. Points to Longer of Two Objects (Activity)
When presented with 2 objects, child will point to the longer of the objects, within 20 seconds of verbal cue "Find the longer (object name)" for 80% of the trials on 2 out of 3 consecutive days.

6. Points to Longer of Two Lines (Activity)
When presented with 2 lines, child will point to the longer of the lines, within 20 seconds of verbal cue, "Find the longer line", for 80% of the trials on 2 out of 3 consecutive days.

SOCIAL CURRICULUM (Activities and Objectives)

1. Responds To Another Person (Activity)
Child will change his/her behavior by increasing activity, turning head, or visually following people around him/her within 20 seconds of social contact for 80% of the trials on 2 out of 3 consecutive days.

2. Regards Face (Activity)
The child will momentarily look at the face of the person interacting with him/her within 20 seconds of presentation of person's face for 80% of the trials on 2 out of 3 consecutive days.

3. Makes Eye Contact With An Adult
The child will establish and maintain eye contact with an adult for 5 seconds within 20 seconds of verbal cue, ["['child's name'], look at me", for 80% of the trials on 2 out of 3 consecutive days.

4. Vocalizes in Response To Adult Talk and Smile (Activity)
The child will vocalize, coo, or make happy sounds within 20 seconds of presentation of adult smiling and vocalizing, for 80% of the trials on 2 out of 3 consecutive days.

5. Smiles At Mirror Image (Activity)
The child will smile at image of self in mirror within 30 seconds of presentation of mirror, for 80% of the trials on 2 out of 3 consecutive days.

6. Responds To Own Name
The child will turn toward a person calling his/her name from a distance of 5 feet within 10 seconds of verbal cue, for 80% of the trials on 2 out of 3 consecutive days.

7. Repeats Social Game Activity (Activity)
The child will respond appropriately to an adult in a game of peek-a-boo or pat-a-cake and gesture for game activity to be repeated within 20 seconds of cessation of game, for 80% of the trials on 2 out of 3 consecutive days.

8. Gives Toy On Request
The child will give toy to familiar adult within 20 seconds of adult request, for 80% of the trials on 2 out of 3 consecutive days.

9. Child Plays Beside Or In Close Physical Proximity With Another Child (Activity)
The child will play beside or in less than two feet from another child for at least 10 minutes, for 80% of the trials on 2 out of 3 consecutive days.

10. Child Initiates Independent Play Task But Required Adult Supervision To Carry Out Ideas (Activity)
The child will initiate task play (alone or with others) for at least 10 minutes, but may require adult supervision for 80% of the trials on 2 out of 3 consecutive days.

11. Participates In Circle Games (Activity)
The child will interact with other children in circle games such as "Ring Around The Rosie", and "The Farmer In The Dell", for 80% of the trials the task is introduced on 2 out of 3 consecutive days.

Appendix C

Individualized Education Program Form

San Francisco Infant Program

Individualized Educational Program

1. Name: Age: B.D.:
2. Medical Considerations and Physical Description

3. Mode of Communication:

4. Behavioral Characteristics:

5. Effective Reinforcers:

6. Interactions with Non-Handicapped Peers:

7. Services:

| Services | Initiation Date | Duration | Personnel |
|---|---|---|---|
| | | | |

Conference Attended By:

Parent Date

Parent Date

Other Date

Teacher Date

Therapist Date

Other Date

Area:

Long-Term Goal:

| Short-Term Objectives | Instructional and/or Teaching Strategies | Anticipated Date of Completion | Method of Measurement | Related Areas of Concern |
|---|---|---|---|---|
| | | | | |

Appendix D

Parent Participation Forms

1) Program Development Sheet
2) Data Sheet
3) Parent Involvement Plan

San Francisco Infant Program

Name: Date:

Objective:

Materials:

Procedure:

Additional Objectives:

Additional Suggestions:

Suggested Ideas for Observation:

Any Questions?

# APPENDIX IV

Down's Syndrome Infant-Parent Program*

TARGET SKILL:

| Week 1 | | | | | | | Week 2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

NOTES:

| Week 3 | | | | | | | Week 4 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

NOTES:

* Adapted from Saunders, R. R., & Koplik, K. A multi-purpose data sheet for recording and graphing in the classroom. AAESPH Review, 1975, 1, 1-8

This data sheet appears in Hanson, M. J. Teaching your Down's Syndrome infant: A guide for parents. Baltimore, Maryland: University Park Press, 1978.

# RICHMOND EARLY CHILDHOOD EDUCATION PROGRAM (RECEP)
## PARENT INVOLVEMENT PLAN (PIP)

PUPIL NAME _____

SCHOOL _____

_____

PARENT/GUARDIAN _____

ADDRESS _____

_____

PHONE _____

SPECIAL EDUCATION PROGRAM _____

DATES

PIP MEETING _____
PIP BEGINS ON _____
REVIEW _____

3-YEAR ASSESSMENT BY:
_____

---

| AREAS OF NEED: | PARENT SIGNATURE | TEACHER SIGNATURE |
|---|---|---|
| EDUCATIONAL SERVICES: | | |
| 1. POSITIONING | _____ | _____ |
| 2. CARRYING | _____ | _____ |
| 3. MOTOR SKILLS: | | |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| 4. HAND USE/MANIPULATION | _____ | _____ |
| 5. LANGUAGE - EXPRESSIVE | _____ | _____ |
| 6. LANGUAGE - RECEPTIVE | _____ | _____ |
| 7. SENSORIMOTOR | | |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| 8. FEEDING/PRE-SPEECH | _____ | _____ |
| 9. BATHING | _____ | _____ |
| 10. DRESSING | _____ | _____ |
| 11. TOILETING | _____ | _____ |
| 12. HANDWASHING | _____ | _____ |
| 13. PLAY | _____ | _____ |
| 14. BEHAVIOR MANAGEMENT | _____ | _____ |
| 15. SPECIFIC STRATEGIES FOR TEACHING (SPECIFY CURRICULUM AREAS) | _____ | _____ |
| 1. _____ | | |
| 2. _____ | | |
| 3. _____ | | |
| 4. _____ | | |
| REFERRALS FOR RELATED SERVICES: | | |
| 1. SOCIAL SERVICES ASSISTANCE | _____ | _____ |
| 2. RESPITE OR CHILD CARE | _____ | _____ |
| 3. TRANSPORTATION | _____ | _____ |
| 4. MEDICAL OR DENTAL | _____ | _____ |
| 5. FAMILY COUNSELING | _____ | _____ |

---

LIST OF ANNUAL GOALS FOR PARENT PARTICIPATION
CAN BE FOUND ON PAGE 2

RECEP

# PARENT/STAFF TRAINING FORM

8

DATE:

PARENT/STAFF:

STUDENT:

LEARNING AREA:

ACTIVITY:

INSTRUCTOR/RATER:

KEY:
- B = baseline
- I = intervention
- F = follow-up

RATINGS:
1. No correction necessary
2. Verbal suggestion only
3. Verbal suggestion with some physical correction
4. Necessary to retrain technique

RATING

| SEQUENCE OF BEHAVIORS | NAME | |
|---|---|---|
| | KEY | |
| | DATE | |
| I CHILD'S POSITION | | |
| II ADULT'S POSITION | | |
| III ANTICIPATED RESPONSE | | |

Appendix E

Student Thesis

# TEACHING MOTOR SKILLS TO TWO SEVERELY HANDICAPPED INFANTS - A COMPARISON OF APPROACHES

A thesis submitted to the faculty of
San Francisco State University
in partial fulfillment of the
requirements for the
degree
Master of Arts

by

MARGARET ANN VELTMAN

San Francisco, California

September, 1981

CERTIFICATION OF APPROVAL

I certify that I have read TEACHING MOTOR SKILLS TO TWO SEVERELY HANDICAPPED INFANTS - A COMPARISON OF APPROACHES by Margaret Ann Veltman, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of requirements for the Master of Arts degree at San Francisco State University.

Marci J. Hanson, Ph.D.
Lecturer, Department of
Special Education

Wayne S. Sailor, Ph.D.
Chairman, Department of
Special Education
Severely Multiply
Handicapped

Norm Wallen, Ph.D.
Chairman, Department of
Special Education

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CHAPTER I

## Introduction

The early responses of infants reflect their efforts to explore and control their environments. The more opportunities children have to test behavior, the more likely they are to modify their own actions and cope with their surroundings. The predominate concern for handicapped infants is that they too are provided with experiences which will result in satisfying interactions (Conner, Williamson, and Siepp, 1978).

Severely handicapped infants may have severely limited behavioral options. Under such circumstances, successful environmental transactions must necessarily be facilitated, or exaggerated, enabling infants to identify relationships between events.

Cause and effect, or contingent relationships imply that actions are conditional; that they control or are controlled by other actions. Active participation in deciphering contingencies is an inherent prerequisite to learning, and it is a continual process, requiring increasingly complex manipulations of our environments. Since intellectual competence is largely determined by the ability to deduce an outcome from prior experiences, the

condition or status of an organism is partially dependent upon the extent to which these action-pairings are realized. Under normal circumstances, the organism encounters contingent situations repeatedly. Once relationships between actions are understood, behavior can be elicited predictably, and according to need. Thus, through exposure, experience, and modification, we learn to manipulate our environments effectively.

The behavioral school of thought postulates that learning is primarily the result of the interactions an organism engages in with extrinsic environmental elements. Developmentalists maintain that these experiences are essential to higher cognitive functions. Piaget, an interactionalist, describes the experiences in terms of normal maturational occurrences in the sensorimotor stages of development, (the period from birth to two years of age). He outlines the infant's progressive interactional initiations beginning with purely reflexive actions, followed by a preoccupation with the actions themselves, to a rudimentary, and finally, a functional understanding of the means-ends relationship.

How we incorporate feedback from our environments and how well we learn to use this information to further control over our changing surroundings only becomes an issue when the process is so thow interrupted. Under severe, physical handicapping conditions, interactional initiations, in particular, those subtly emitted

by the infant, may not be detected by the environment. In unresponsive surroundings, the opportunity to derive cause and effect information is restricted, possibly impeding higher learning. Special educators have developed curricula for the school-aged segment of this population to insure feedback for specific responses. The majority of these programs follow an operant paradigm, whereby the student is typically both cued and rewarded or reinforced for a targeted behavior. Interactions are monitored and controlled. These techniques have gained increased popularity in the area of severely handicapped because of their effectiveness in facilitating skill acquisition. They are not, however, always appropriate for use with infants who may habituate (show a response decrement to repeated presentations of a stimulus), pass through different states of arousal, require short latency periods for reinforcement, and move in increments that cannot always be assessed with relative accuracy.

Prosthetic devices have also been employed with school-aged and older severely handicapped people. Some offer assistance through providing the individual with personal or bodily adaptations, (artifical limbs, pointing devices, splints, etc.). Others facilitate responding via adaptation or arrangement of the environment. Examples of these are seating and standing equipment, for static positioning and inflatables (swim rings), for encouraging dynamic or active responses (Kasari and Filler, 1981). A

subcategory of the latter group include actual manipulanda, or learning devices, which may detect, measure and/or consequate a given behavior. It is unfortunate that the consequence, in order to be reinforcing for older severely handicapped persons, is often not functionally related to the targeted response, thus creating a contrived situation.

Though advances continue to be made in these areas, the crucial time to intervene is when interaction naturally begins, in infancy. Since an individual theoretically formulates cause and effect relationships from feedback s/he receives as a result of acting upon the environment, prosthetics alone do not constitute an adequate remediation. Curricula designed for older children, unless modified in light of issues specific to infancy, would likewise be inappropriate. The severely handicapped infant who is physically impaired must be given every opportunity to initiate interactions with the environment through normal channels. A device sensitive enough to detect minute motoric changes and efficient enough to provide contingent reinforcement within a specific latency period, may provide the optimal conditions for an exchange to occur. The training of functional motor responses, consequated by naturally ensuing phenomena, when possible, may enhance further initiations, exploration and learning in this traditionally difficult population.

From a theoretical standpoint, understanding cause and effect relationships is prerequisite to higher cognitive processes. The possibility exists, then, that the failure to learn under severe handicapping conditions may at least be partially due to an inability to establish these relationships. Learning devices may provide the vehicle by which such information is gained.

The purpose of this investigation was to 1) measure the efficacy of employing learning devices to teach functional motor responses, and 2) foster the understanding of cause and effect relationships in severely handicapped infants. This method was compared to a therapeutic approach, currently the standard intervention strategy used in many infant programs, whereby the physical or occupational therapist directs or provides "hands-on" motor training.

## CHAPTER II

## Review of the Literature

"A major form of mythology about infancy has been that the infant, especially during the neonatal period, is an incomplete, relatively incompetent and inadequate organism; and that by a series of linear progressions, the infant becomes a complex, competent, and complete organism - an adult. Such a view is a logical and emotional heritage of the supposedly discarded notion that the infant is a miniature adult with a tabula rasa, helpless and passive, dependent on an imprint from the mature caretaker who provides a model for limitation and a stimulus for learning adult modes of thinking and behavior." (Thoman, 1979). Research findings, however, have shown that the neonate is equipped, at birth, to actively engage in interaction with the environment. For example, data strongly suggest that a baby's hearing is functional by 32 weeks gestation (Eisenberg, 1970), that newborns are capable of conjugate eye movements (Dayton, Jones, Steele, and Rose, 1964), visual tracking across horizontal and vertical planes (Brazelton, Scholl, and Robey, 1966), and visual fixation at an eight inch distance (Haynes, White, and Held, 1965).

The perceptual competencies of the young infant, such as depth perception and size/distance relationships, are likewise identified in the literature (Bower, 1966; Bower, 1965; Campos, Langer, and Krowitz, 1970), along with evidence that infants even have gustatorial preferences (Nisbett and Gurwitz, 1970; Desor, Maller, and Turner, 1975; Engen, Lipsitt, and Peck, 1974). We now suspect that the behavioral repertoire of a normal newborn infant allows for the accommodation of characteristic care-giving exchanges between the baby and her/his parents (Goldberg, 1977; Schaffer, 1971).

Learning then, does not occur in a passive sense, in the absence of at least rudimentary responses, nor does it emerge entirely as a product of pre-programmed genetic processes as a baby grows older. Deprivation studies involving animals (Harlow, 1958; Harlow and Harlow, 1965; Harlow and Zimmermann, 1959; and Maier, 1949), and young institutionalized children (Provence and Lipton, 1962) highlight the role of the environment in the development of normal intellectual or pre-requisite functions. Further, experimenters have discovered that by manipulating environmental events according to a specific strategy, responses can predictably be elicited, shaped, lengthened, generalized or completely eliminated (Reese and Lipsitt, 1970; Snell and Smith, 1978; Haring, 1977; Kauffman and Snell, 1977; White and Haring, 1976; Axelrod, 1977; Kazdin, 1975).

Various manifestations of classical and operant conditioning are now considered responsible, by many learning theorists, for much of our behavior. Consequently, the operant paradigm appears in several published curricula designed for school-aged severely handicapped children (Guess, Sailor, and Baer, 1976; Fredericks, 1976).

Classical (Fitzgerald and Brackbill, 1976) and operant training techniques have likewise proved to be effective at the level of infancy. The operant method, in particular, when used either alone or in combination with classical conditioning, was found to be successful in changing behavior (reviewed in Sherrod, Vietze, and Friedman, 1978; Ramey and Ourth, 1971; Sameroff and Cavanagh, 1979). This research has shown that manipulation of variables, most frequently, consequences to infant responses, can alter behavior such as head turns, kicks, coos, and sucks (see Hulsebus, 1973 for reviews; Siqueland and Lipsitt, 1966; Rovee and Rovee, 1969; Watson, 1972; Caron, Caron, and Caldwell, 1971; Fagen and Rovee, 1976; and Solkoff and Cotton, 1975). Young infants even have been taught complex discrimination tasks using conditioning procedures (Sheppard, 1969). Curricula created specifically for intervention with infant populations lend considerable credence to these findings (Hanson, 1977; Dennison and Bricker, 1976).

Perhaps the key feature of operant programming with infants lies in the requirement of <u>active</u> responding by the baby. While the popular use of "sensory stimulation"

may have a purpose in eliciting some positive effects, (i.e., range of motion to prevent contractures, proprioceptive feedback to encourage normal posturing and sensory experiences in cases of deprivation), it generally implies passivity on the part of the recipient, and its exact contributions to child development remain unclear.

Data gathered from the Fels Infant study (see Lewis and Goldberg, 1969), indicated that over stimulation of an infant's sensory receptors by <u>random</u> stimuli actually produced a decrement in attending behavior. Under such conditions, the more the infant was passively stimulated, the less s/he attended. Studies additionally have disclosed that there is a response decrement to <u>repeated</u> stimuli, "habituation", that may, in fact, be cortical. It is hypothesized that the brain, after processing the intensity, duration and quality of a signal, retains it, and then produces negative feedback resulting in a decreased or absent response (Hebb, 1949; Sokolov, 1963; Lewis, 1967; Lewis, Goldberg, and Rausch, 1967). Without experience, the infant is unable to control, process or act upon extrinsic stimuli. If these conditions persist, s/he becomes at risk for a phenomenon termed "Learned Helplessness" by Martin Seligman (1975). Learned helplessness is characterized by the cessation of activity and initiative, and is brought on by frustrated attempts to engage or control environmental

events. The condition has been observed in animals and is believed to induce psychological change within the organism. It seems to be somewhat related to resignation, an attitude Maier (1949) describes as having a "lack of overt behavior", in which "motivation seems to be largely absent".

Experience, then, must be gained according to some highly organized plan, in which the organism is allowed to actively participate in deciphering, processing and eventually controlling extrinsic environmental activity. Jean Piaget has hypothesized such a system, which he described in the sensorimotor period of development (Piaget, 1959). With the help of intact sensory receptors (which are largely in a reflexive state), the neonate randomly moves for what appears to be the enjoyment of movement itself (with the exception of survival responses). Experimentation with available behavior leads to a rudimentary ability to discriminate the effects produced by certain actions. In stage three (secondary circular reactions) of Piaget's developmental sequence, the infant seeks to continue a pattern which sustains a pleasurable event. S/he finally learns to apply behavior across situations, modifying them when appropriate. Piaget attached special significance to the third stage of the sensorimotor period because he felt it marked the onset of intelligence. This stage includes intentionality, a shift in interest from the response itself to the

consequence of the response, memory and the beginnings of "contingency awareness" (Watson, 1966). Contingency awareness refers to "an organism's readiness to react adaptively in a contingency situation and to an organism's sensitivity in the perception of contingency situations when they occur," (Watson, 1966). Watson further suggests that contingency awareness creates motivation to effect further environmental change. Evidence of the motivation was found in infants' responses to contingent experience. Infants responded at higher rates when placed in a contingent condition, (i.e., infant response produced outcome), than in noncontingent, (i.e., outcome occurred independent of infant response), and baseline conditions. The contingent situation produced other positive effects, such as increased attending, smiling and cooing. In this experiment, using normal infants as subjects, head turns produced the turning of a mobile. Other studies in this area have shown that infants have responded with nutritive sucking contingent upon a head turn (Siqueland and Lipsitt, 1966), non-nutritive sucking for visual stimulation (Stern and Jeffrey, 1965), kicking to activate a mobile (Solkoff and Cotton, 1975), vocalizations to provide adult vocalization (Ramey and Ourth, 1971), foot thrusts to create conjugate visual stimulation (Rovee and Rovee, 1969), social reinforcement contingent on a touching response (Millar, 1976), and contingent affective responses between mother and infant (Lewis and Goldberg,

1969). The contribution of these experiences toward the motivation for further exploration and learning remain speculative. The consistent findings of increased positive and active target behavior do, however, indicate that infants are motivated to interact with the environment under contingent circumstances.

The motivation to learn was formally thought to result from psychological drives. In 1959, White hypothesized that motivation was rather born out of feelings of "efficacy", as the child competently engaged in active exploration and manipulation of the environment. Jennings, Harmon, Morgan, Gaiter, and Yarrow referred to it as "mastery motivation" in 1979. Wenar (1964), called it "executive competence", combining the theories of White and Ausubel to describe these responses in one year olds. Watson (1972), and Watson and Ramey (1972) found correlations between the infants' activities and their affective behavior. Goldberg argues that early social relationships are enhanced by mutual feelings of efficacy derived from reciprocal contingent interactions between infants and caregivers (Goldberg, 1977). Watson reasons that the nature of an infant's interactions are far less significant than the manner in which they take place. In other words, regardless of its content, if a situation provides a contingent relationship, it has value. Watson hypothesizes that an infant's first awareness of a clear contingency normally emerges from the

game-like interactions s/he engages in with her/his parents. Concerning the value of the responses involved he states simply, "The Game is NOT important to the infant because people play it, but rather people become important to the infant because they play 'The Game'" (Watson, 1972 and Watson, 1979).

The interactions experienced by handicapped infants may be both qualitatively and quantitatively different from those experienced by normal babies. Sensory deprivation during formative periods of development can result in failure of the deprived sensory system to develop and function normally. Neurophysiological structures, in these instances, have shown abnormal growth from the distal sensory receptors, through the sensory relay nuclei, to the cerebral cortex (Prescott, 1976). Information may be confusing, sporadic or simply inadequate for processing. Reflexes may be absent, or abnormal, jeopardizing even survival. Movement may be limited, involuntary or insufficient to produce any effect, and thus the environment may offer no constructive feedback. The typical route to development is interrupted, normal channels of interaction blocked, and the infant derives frustration from futile efforts at making sense of her/his surroundings. Severe and/or multiple handicapping conditions may deny a child the means to engage the interactional system. Additionally, through continual unsuccessful, unreinforced attempts to

establish new behavior, the multiply handicapped infant may accept incompetence and learn helplessness.

There are, however, indications that the negative effects of sensory deprivation can at least be lessened. In 1957, Norris, Spaulding, and Brodie concluded that blind infants showed selective developmental lags (Cattell Infant Intelligence Scale) in those areas in which they lacked experience. They also noted that those infants who had been allowed and encouraged to explore their environment showed less of a deficiency, (reported in Warren, 1977).

Though existing curricula for older severely handicapped children may serve as a viable resource (Guess, Sailor, Baer, 1976; Fredericks, 1976), they would have to be considerably adapted to accommodate behavior specific to infancy. For instance, an inter-trial interval, a period to provide for clear onset and offset, data recording and reinforcement, could be no longer than a few seconds in duration (Millar, 1972; Ramey and Ourth, 1971; Sherrod, Vietze, and Friedman, 1978; Watson, 1967); stimulus presentations and consequences must remain moderately novel to maintain the infant's interest and prevent habituation (Kagan, 1970; McCall, 1973), and states of arousal must be monitored to insure the infant is performing when most alert (Brazelton, 1973; Wolff, 1976). Curricula also are available for developmentally delayed infants and

toddlers (Fredericks, 1976; Bricker, 1976; Hanson, 1977). These programs are typically equipped with sets of tasks representing different stages of development, and include behavioral training procedures. These curricula, however, are primarily product rather than process oriented, and are therefore more concerned with skill acquisition than facilitating cognitive thought patterns. By including a specific instructional strategy for the attainment of a specific skill, there is a chance that the response will be trained in a single, isolated context. Without additional diverse experiences utilizing the thought process involved, generalization of the skill may be precluded.

Clearly, alternative intervention methods for severely handicapped infants must be explored. Techniques should be designed to incorporate both behavior specific to infancy, and the precision necessary to pinpoint and accommodate minute responses.

Prosthetics and adaptive equipment are common to special education settings. Traditional uses have been to "prevent or alleviate deformities in the child and neurological and or orthopedic problems", and/or to "enable the child to function more normally in therapy, in the classroom, or at home", (Campbell, Green, and Carlson, 1977). During the past few years, several experimenters have also discovered that such equipment could be employed as teaching aids. Mechanical and

electronic devices complimented the operant teaching paradigm by offering increased precision in both the detection and measurement of responses. Reinforcement also could be dispensed systematically, eliminating teacher error. The educational merit was realized and now the use of adaptive devices to elicit learning responses is rapidly becoming a recognized feasibility. Typically, a salient reinforcer is made available for a given response, which is measured by the apparatus. The experiments, primarily with older, severely and physically handicapped individuals have yielded promising results. Most utilized sensitive adaptive equipment to measure and contingently reinforce slight changes in behavior, i.e., increased range of motion (Ball, Combs, Rugh, and Neptune, 1977), controlled arm movements (Murphy and Doughty, 1977), drawer pulling and doorknob rotation (Friedlander, Kamin, and Hesse, 1974), and head posture (Ball, McCrady, and Hart, 1975). More recently, Zuromski and colleagues (Zuromski, Smith, and Brown, 1977; Accrino and Zuromski, 1978) have demonstrated that electromechanical devices can be used to teach simple discrimination tasks and motor responses (i.e., arm movements) to multi-handicapped institutionalized children.

Commonly in these studies, there is a disparity between the targeted response and the consequence. A possible explanation for this condition may be the difficulty one encounters finding salient reinforcers for

severely handicapped persons. Strong reinforcement is necessitated by a lack of motivation to perform skills that otherwise hold little meaning for the subject. The targeted response may be acquired, but the situation remains highly contrived, and may require additional training for generalization. The functionality of the skill, by definition, becomes questionable. Guess, Horner, Utley, Holvoet, Maxon, Tucker, and Warren, 1978, set the following criteria for functionality. A functional response is one that "1) Produces an immediate consequence for the child; 2) Is reinforcing; and 3) Combined with the consequence, is natural to the child's interaction with the socio-ecological or prosthetic environment". Teaching an isolated skill, unrelated to its consequence, does not qualify as natural to a child's interaction with the environment.

The major role of learning devices in most of these experiments appears to be to increase or teach a given response. Learning devices can also be used to teach cause and effect relationships. The subject learns that the response is important because it produces an effect, or change in conditions that s/he can control. The consequation, approach and degree of response may be manipulated per device. If the terminal objective is cause and effect understanding, then variety must be employed to increase the probability that the skill will generalize. Perhaps contrived situations could be

avoided by providing opportunities with contingency devices early in the post natal period. Ideally, naturally occurring phenomena would then become sufficiently reinforcing, eliminating the need for exaggerated and conspicuous training techniques with severely handicapped persons.

The advantage of learning devices are many. They include: detection of minute changes in responding, systematic and immediate consequation, easy set-up and transport, and simple construction. Most importantly, they can usually be adapted or modified to suit individual needs and diverse programs, which makes them cost efficient and lessens the possibility that they will be misused.

Learning devices are by no means a parent or teacher substitute. In fact consequation may well involve contingent interactions with an adult (Ramey and Ourth, 1971; and Watson, 1966). Learning devices primarily serve as accurate indicators of behavior that may otherwise not be identified by the environment.

Summary

Theoretical perspectives and evidence gathered in research investigations document that infants require active involvement with the environment for optimal development. Normally, an infant is born with sensory receptors and a behavioral repertoire ready to accommodate exchanges with her/his surroundings. With

repeated exposure and experimentation, the infant learns to anticipate and control cause and effect associations. The motivation to initiate further understanding of environmental phenomena may result from the feelings of efficacy the infant derives from successful interactions. When an infant is unable to control the environment, s/he may become frustrated and accept incompetence. Severely sensory and/or physically impaired children are at risk for learning helplessness because they cannot achieve interaction through normal channels. The environment often does not recognize their attempts because they may be difficult to detect, and, therefore, it does not offer feedback. Training techniques to prevent the lack of feedback have been incorporated into curricula designed for severely handicapped children. Such procedures have also been incorporated into curricula for developmentally delayed infants and toddlers. The problems apparent in many of these programs are; 1) they do not address issues of infant behavior; 2) they train isolated skills instead of concepts; and 3) they depend on human observation only for the assessment of responses.

Learning devices, though primarily used for other purposes in the past, may prove useful tools in the detection, measurement and consequation of minute responses emitted by handicapped babies. Perhaps they can also aid in teaching cause and effect relationships, a functional response that may eliminate the need for

exaggerated or contrived training techniques later on in life. A more obvious use is to increase or teach isolated motor skills. The advantages of employing such equipment are many. They may be used in combination with training from the parent(s) or teacher, they are cost efficient, adjustible and easy to transport.

This study investigates the effects of training two motor responses on learning equipment. This procedure is then compared to a more common, "hand-on" approach, involving consultation with an occupational therapist.

## CHAPTER III

## Methods and Procedures

### Subjects

The infants involved in this investigation were chosen from those enrolled in the Richmond Early Childhood Education Project (RECEP), a federally funded demonstration project affiliated with Virginia Commonwealth University and the Richmond Public School system. This program presently serves infants and preschoolers from birth to six years of age who are determined to be at least fifty percent or more delayed in their development. This means that with prematurity taken into consideration (corrected age), their developmental skill levels resemble those of either a child half their age or younger. RECEP encourages parent participation and both parents and staff are trained in various interventions with all children. Out of the 18 infants (birth to two years) attending, only two resembled each other motorically and needed training on similar skills. Both subjects were black males, aged between 12 and 24 months, had severe motoric delays and significant developmental delays in most other skill areas. The parents of both subjects also expressed a willingness to have their infants participate in the study.

Subject one was described as being hypotonic, with low muscle tone and a floppy appearance. He had head control, righting responses and some sitting balance. The public school visual itinerant reported that this infant had acuity, and slow but present tracking responses. He was 22 months old when the investigation began.

Subject two was described as having ataxic movement, characterized by fluctuating muscle tone. He also had head control, righting responses and some sitting balance. Visual responses were likewise intact for this subject. He was 14 months of age at the beginning of the study.

An assessment conducted by the occupational therapist (Developmental Screening Inventory; Gesell and Amatruda, revised, 1980), and the investigator (Uniform Performance Assessment Scale; White, Edgar and Haring, 1978), prior to the investigation showed that both subjects had unilateral reaching responses. Volitional grasps were absent in the repertoire of subject one and minimal for subject two. Reflexive behavior had evidently been integrated in both infants. Both were able to bear weight momentarily in a prone position on their forearms. Weight bearing on extended arms could not be elicited in either infant.

Prior to experimental treatment, the parents of each subject were given written explanations of the study. The investigator then met with each in order to

answer questions and address concerns. At this time the tentative training schedules were discussed and consent forms, (included in the appendices) were signed.

Setting

The infants received training for both treatments in the infant classroom. This room is located in a self-contained public school for the severely handicapped. Preparatory procedures for treatment 1 were administered in the center of the classroom on a carpeted floor (weight bearing) and in the same location in a carrier for the bilateral reach/grasp response. Sessions were video-taped with a Sony portable tape player, a camera and a monitor. The taping on the equipment took place in the southeast corner of the classroom, facing a wall consisting predominately of windows. Videotape equipment remained visible over all phases. A black curtain situated on either side of the devices was used to minimize visual distraction. (See Appendix 2 for diagram of classroom.) Exact conditions existed throughout the study with the exception of sporadic periods of background noise.

Learning Equipment

The equipment was constructed to fit the infants' needs with input from the occupational therapist. One utilized microswitches that could be triggered by a certain amount of pressure. It was designed to detect and consequate equal weight bearing. The other device had a wire and conductive tape switch. Its purpose was

to train a bilateral reach/grasp. The reinforcement contingent on these responses was chosen from those stimuli reported in research studies to be preferred by normal infants (i.e., reflective colored paper and lights). Habituation and satiating effects were minimized by staggering A.M. and P.M. training sessions and rotating visual displays (three per device) every time a subject used a particular piece of equipment. Additionally, the two sets of displays differed with respect to each other. Different combinations of colored Christmas lights were used for the weight bearing device while illuminated foil and colored acetate was used for the bilateral reach/grasp equipment. Design specifications of the learning equipment are included in appendix 8. Responses were counted during ten minute sessions beginning approximately 10 seconds after the infant was positioned for each of the treatment phases.

Experimental Design

A single case, multiple baseline design within subjects and across tasks was used for this study. The design is typically used to show the effects of treatment and generalization by intervening on a single variable at a time, while carrying out another or others under baseline conditions. In this way, functional relationships between treatment procedures and changes in behavior can be identified (Hanson and Bellamy, 1977; Hersen and Barlow, 19[redacted]. This study differs only in

that it includes a treatment (1) that can also be perceived as an additional baseline or intermediary phase to which the experimental condition was compared. The motor responses chosen, in keeping with the design, were both topographically and functionally dissimilar.

Baseline data was collected over a four day period prior to treatment to insure that the responses were not already in the subjects' repertoire. Training using treatment 1 procedures (standard) was initiated for both skills following baseline for each subject, and carried out for 10 sessions. Treatment 2 (learning equipment) was then implemented, and training with this procedure occurred for another 10 sessions involving only one response per subject. A three session continuation of prior conditions was added one week after the experimental phase had terminated. The study ran for a duration of fourteen weeks.

Independent Variable

Treatment procedures, standard (1), and those involving the learning equipment (2), constituted the independent variable.

a. Treatment 1 consisted of two motor training procedures conceived of cooperatively by the classroom teacher and occupational therapist on staff. The program followed an operant or measurable paradigm and employed techniques borrowed from Bobath and Rood. Subjects received proprioceptive input, were prompted, and reinforced with tactile and auditory praise. The light displays were continuous. (See appendix 6.)

b. Treatment 2 utilized learning equipment to train the two motor responses. The reinforcement available (light displays) was response contingent. Subjects were prompted only. (See Appendix 7.)

Dependent Variables

The dependent variables were:

1) motor skill acquisition, as measured by rate of responding

bilateral reach/grasp: bilateral reach and simultaneous grasp of lateral portions of steering wheel on apparatus independent of prompting

weight bearing: equal distribution of weight on extended arms in lateral midpoint sectors of switch platform with palms down, independent of prompting

2) approximation of motor skill, as measured by rate of responding

bilateral reach/grasp: maintenance of a prompt, contact of hands or close proximity of hands (within a two inch distance to lateral portions of steering wheel)

weight bearing: bilateral hand placement in lateral midpoint sectors of switch platform as the result of prompt maintenance and/or equal but insufficient weight bearing on extended arms with palms facing down and in lateral midpoint sectors of switch platform

3) attention, as measured by duration of visual fixation

visual fixation: the fixation of the subjects' eyes on the display panel provided by the device

4) change in affect, as measured by frequency of smiling, vocalizations and fussing and duration of crying

smiling: upturning of corners of mouth

vocalization: voiced, playful and/or unagitated utterance occurring on a single exhalation

fuss: whine, agitated vocalization frequently accompanied by a grimace or frown and/or an attempt to change position, on one exhalation

cry: long, even vocalizations typically accompanied by squinted or closed eyes, tears, and a gasp at the end of the exhalation

5) Changes in state were documented both before the child was placed on an apparatus and immediately following the session. (Reference for determining state of arousal was Brazelton, 1973.) See appendix 3 for definitions.

Experimental Phases

Pilot. Both learning devices were piloted before the investigation to make sure they were mechanically sound. The two additional subjects chosen to test the devices were both black males, one six months of age and the other, over two years. One was severely handicapped, the other, within normal limits cognitively. Both were mildly motorically impaired. Parental consent was obtained to run these sessions, which were also videotaped. Both subjects were successful in activating both pieces of learning equipment.

Baseline. Baseline data was collected on each experimental subject in order to determine whether or not responses were present in their repertoire. The subjects were positioned on the learning equipment for four 10 minute sessions per device. Three second physical prompts were given initially and after a one minute duration. Light displays were continuous and no consequation was available for responses. (See appendix 5.)

Treatment 1. Treatment 1 described a standard motor training strategy involving a collaborative effort between the staff occupational therapist and the class-

room teacher, who devised the program plan. Training included preliminary proprioceptive procedures, followed by positioning on the learning equipment. The programs, which incorporated Bobath and Rood techniques, consisted of behavioral or measurable descriptions of positioning, stimulus presentation, and consequation (tactile and auditory) for appropriate responses. (See appendix 6 for indepth description.)

Treatment 2. Treatment 2 involved the adaptive learning equipment and required therapeutic input only to identify the tasks to be taught and to determine the child's position prior to interaction with the equipment. Reinforcement in the form of colored light displays for a targeted motor response was provided by closing electronic circuits. Reinforcement was available only at the time the targeted behavior was being performed. That is, the consequation and response occurred simultaneously. (See appendix 7.)

The treatment with the learning equipment took place in two ten minute sessions per day, once in the early morning and once at noon, three to four days per week (usually Tuesday through Friday). Prior to the experiment, the investigator determined that these particular subjects would be alert during these times. The sessions remained uniform throughout the study.

Carryover of treatment 1 procedures into routine caregiving activities occurred to a certain

extent during the time when treatment 2 was in effect. For example, training in self-feeding necessarily involved additional work on reaching and grasping. Training on the equipment, however, was restricted to the designated teaching times.

Additional Sessions. A continuation of prior phases was taped one week after the termination of the sessions containing the experimental treatments. These few sessions provided additional information as to the maintenance of skills acquired under the same conditions.

Experimental Procedures

A prompting procedure was used over all conditions, occurring once, at the beginning of each session, and again one minute after the session had begun. For weight bearing, the prompt consisted of downward pressure on the subjects' shoulders while elbows were extended and palms were resting downward on the switch platform. Each prompt lasted for a three second duration. Prompting for bilateral reach/grasps consisted of a full hand prompt (experimenters hands encompass subject) to each hand around the steering wheel, also for a three second duration. All prompts were administered with the experimenter positioned behind the subject and remained uniform throughout the study. No responses occurring during prompting were recorded.

Subjects were made comfortable and state was controlled as much as possible before training. Diapers

were checked, and if necessary, changed, noses were wiped or suctioned, and subjects were dressed appropriately.

Subjects were not trained if they were in sleeping or crying states. If crying occurred during training, the experimenter attempted to comfort the infant on the equipment while continuing the session. If sleeping occurred, the session was terminated.

Data Collection and Analyses

Weight bearing responses and approximations, bilateral reach/grasp approximations, visual fixation and crying were measured by the number of seconds they occurred. Bilateral reach/grasp motor responses, smiling, vocalizations and fussing were measured by frequency of occurrence. Data on the frequency or duration of the responses were collected by the experimenter after reviewing the videotapes. Research assistants were then employed to separately read and record all of the same responses after they were screened and scored on the components of each behavior they were observing. The results of this study were analyzed by a visual comparison of slopes of the acquistion of behavior occurring under the two training conditions.

Interobserver Reliability

Interobserver reliability checks were performed on all behavior for all sessions. Percent of agreement was calculated by dividing the number of observer agreements by the number of agreements plus disagreements and then multiplying the quotient by 100.

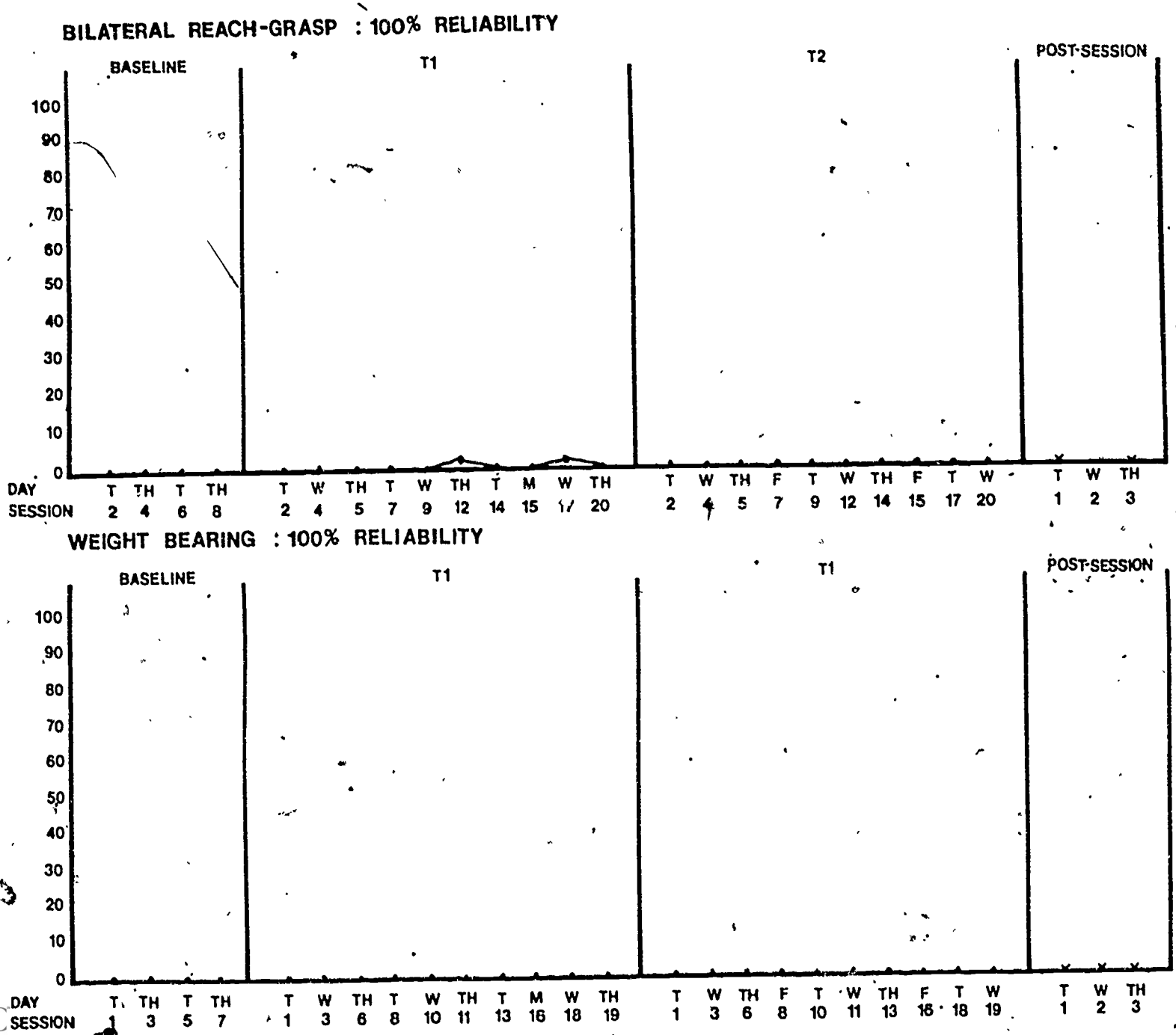
## CHAPTER IV

## Results

### Motor Responses and Approximations

Subject 1 exhibited few responses under both standard and experimental training conditions on the bilateral reach/grasp equipment. Standard training procedures, used throughout to elicit the weight bearing behavior (Subject 1), were likewise unsuccessful. There were, however, increases in approximations of these responses. Bilateral reach/grasp approximations first occurred in the last session of baseline. During treatment 1, they increased, peaked, and then subsided. Under treatment 2, they became variable, but were still high and climbing at the end of the phase. One week later, in post-training sessions, the rate of responding had been maintained. Approximated weight bearing responses for the same subject were variable, and decreased from the first to second treatment (1) phase. Responding during post-training sessions accelerated, possibly indicating a repetition of the variable pattern seen in earler training. (See figures 1 and 2.)

SUBJECT 1



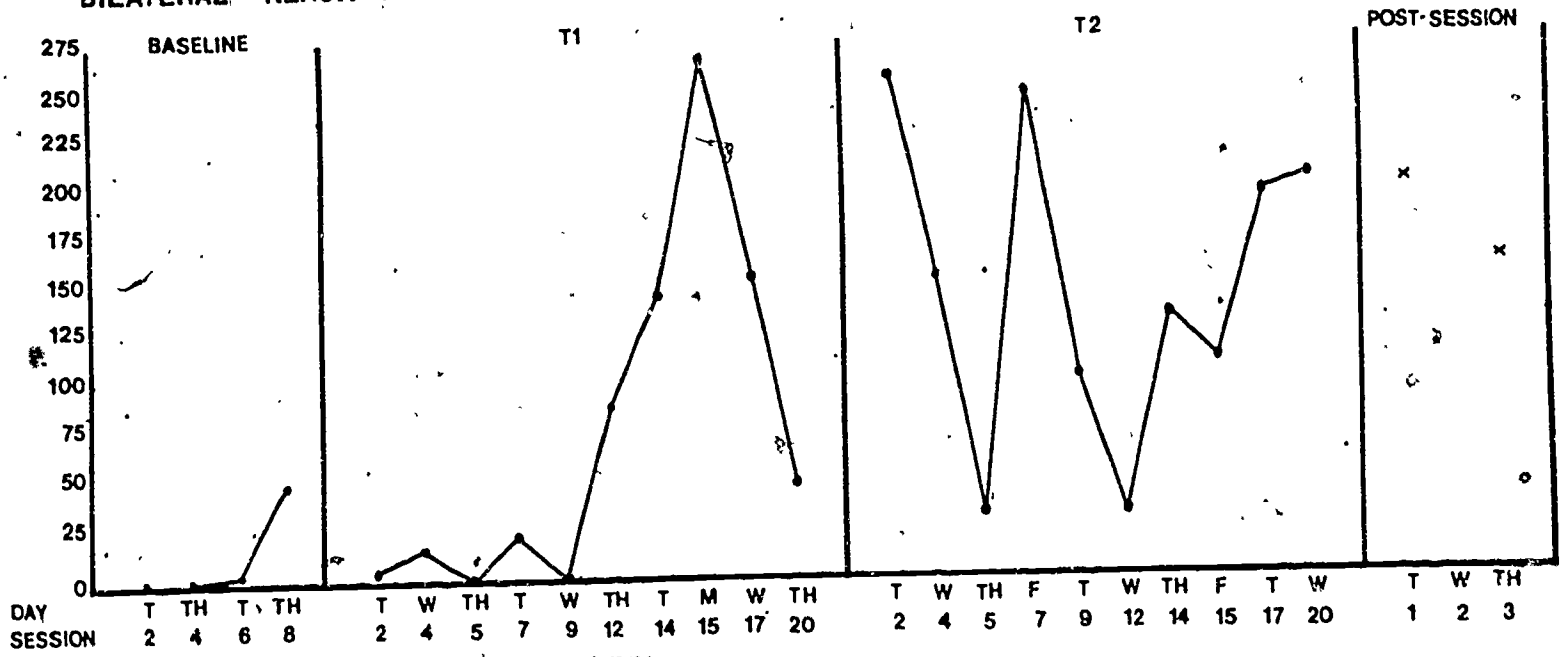

RESPONSE : MOTOR

MEASUREMENT : BILATERAL REACH-GRASP — FREQUENCY

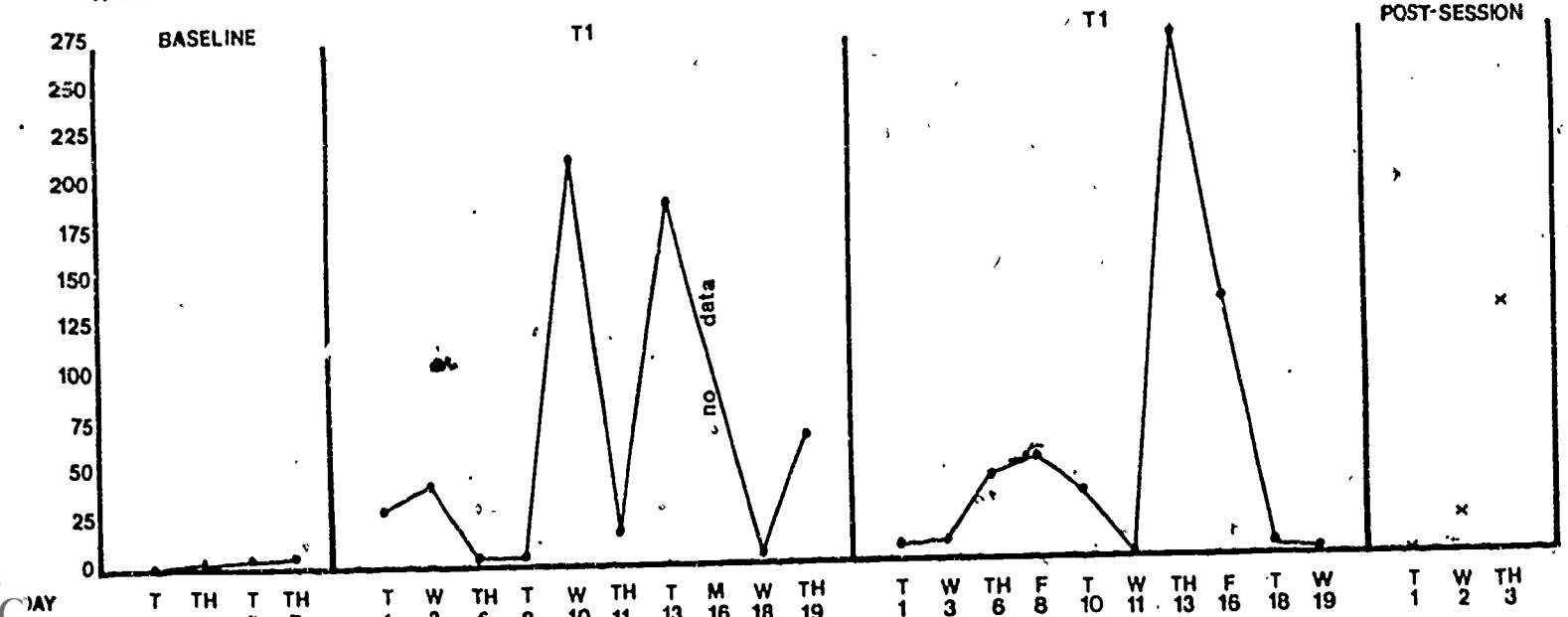
WEIGHT BEARING — SECONDS

SUBJECT 1

BILATERAL REACH-GRASP :90.1% RELIABILITY




WEIGHT BEARING :91% RELIABILITY




RESPONSE : APPROXIMATIONS

MEASUREMENT : SECONDS

Weight bearing motor responses appeared under treatment 2 conditions for subject 2. The bilateral reach/grasp behavior, trained under standard treatment (1) procedures showed little change from phase to phase. Approximations of the weight bearing motor response similarly accelerated under treatment 2 conditions, while approximations of reach/grasp behavior were generally variable, with lowered responses at the termination of treatment 1 and post-training sessions. (See figures 3 and 4.)

Visual Fixation, Smiling and Vocalizations

Visual, smiling and vocal responses for both subjects were variable and did not change significantly as a result of treatment. (See figures 5, 6, 7, 8, 9 and 10.)

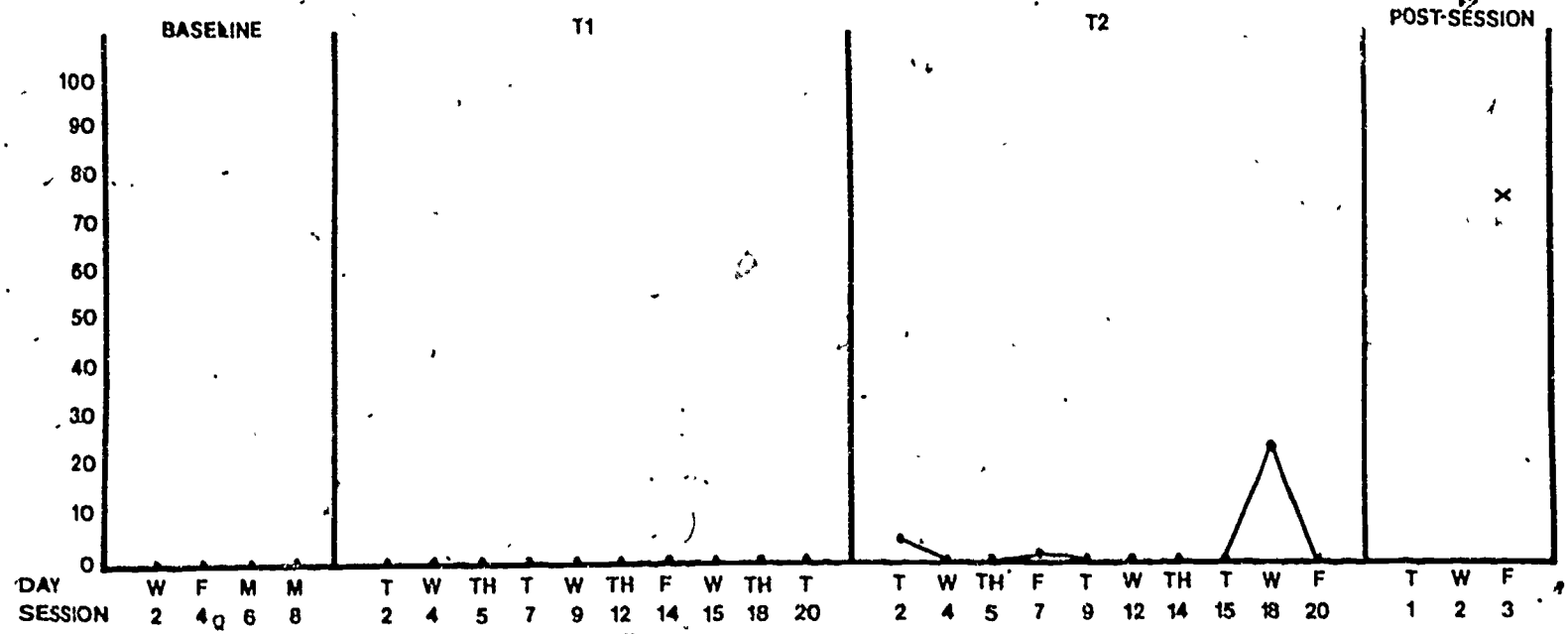
Fussing and Crying

Fussing and crying occurred infrequently during training with the bilateral reach/grasp equipment. The incidence of these responses did not seem specific to any treatment phase for either subject. (See figures 11, 12, 13 and 14.)

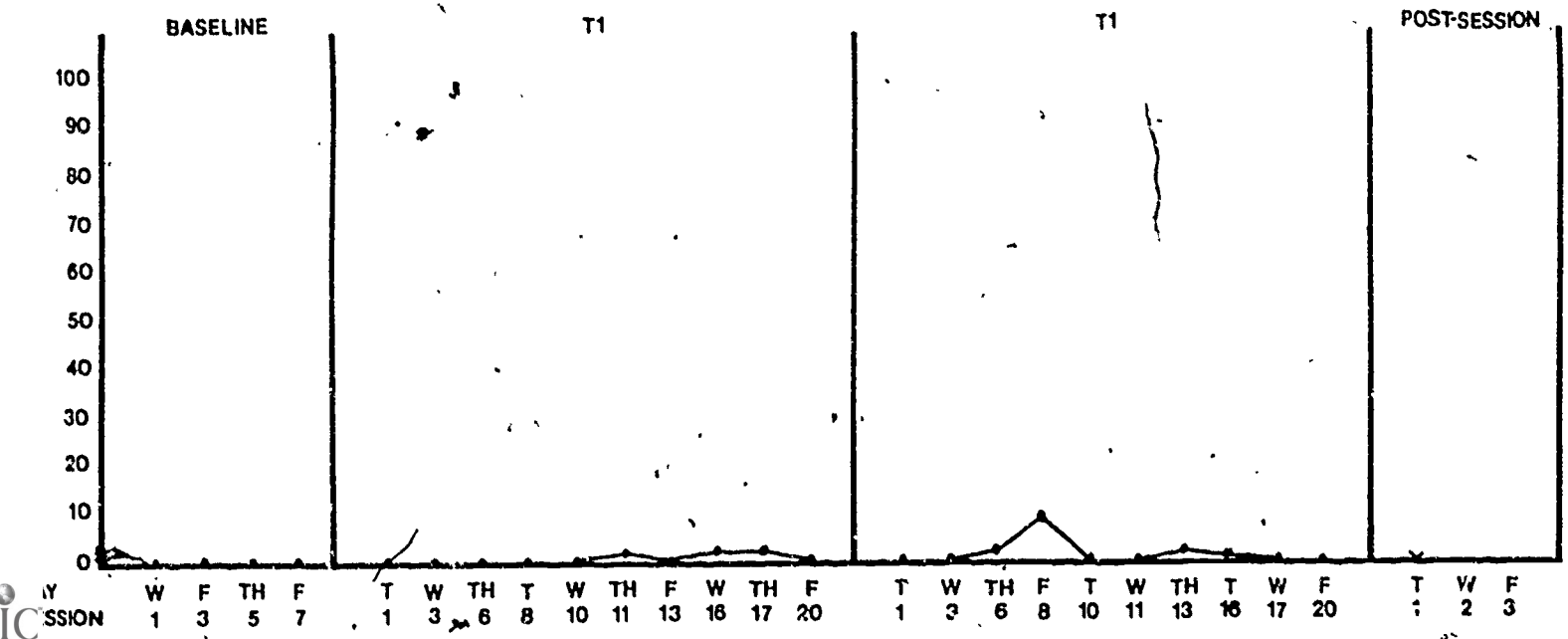
Fussing on the weight bearing equipment was high and variable for subject 1, and increased in the second phase of the standard treatment strategy. These increases occurred simultaneously with decreases in the infant's crying responses. (See figures 11 and 12.) Fussing and crying behavior were similarly variable for

SUBJECT 2

WEIGHT BEARING :85.7% RELIABILITY




BILATERAL REACH-GRASP :100% RELIABILITY

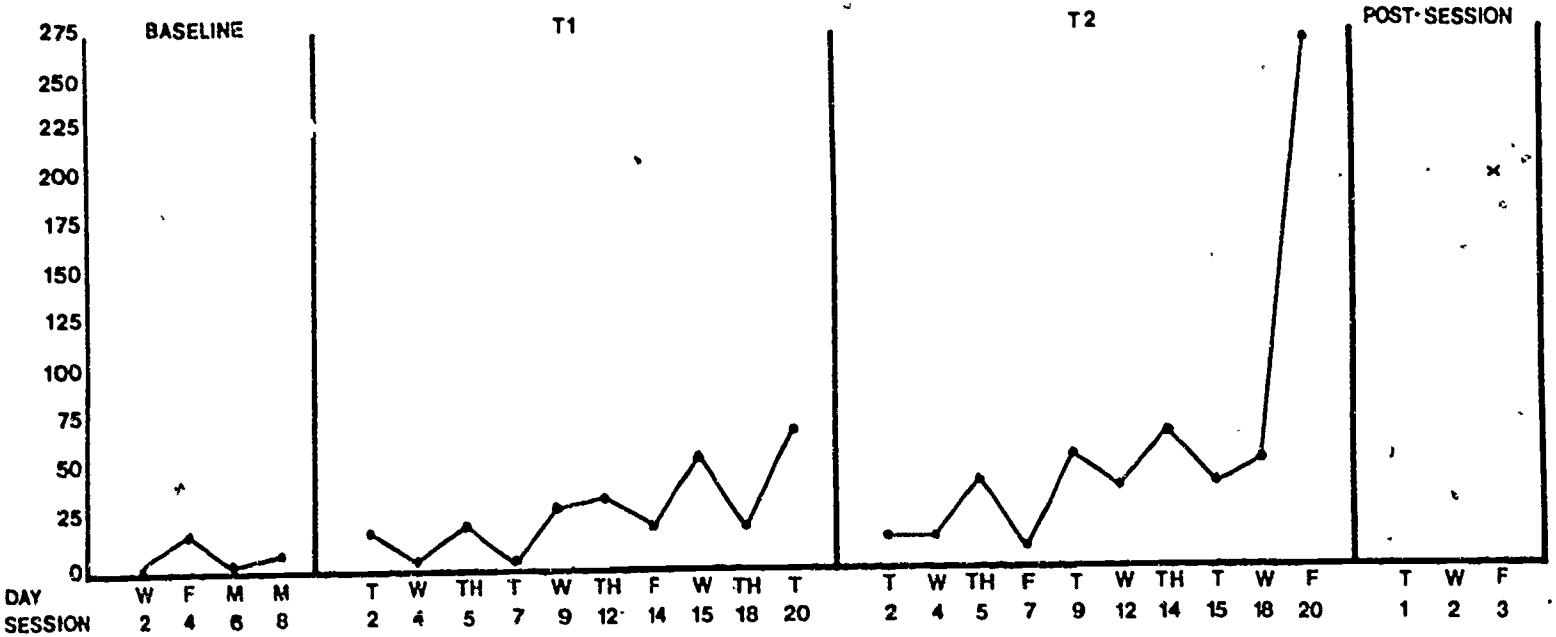



RESPONSE : MOTOR

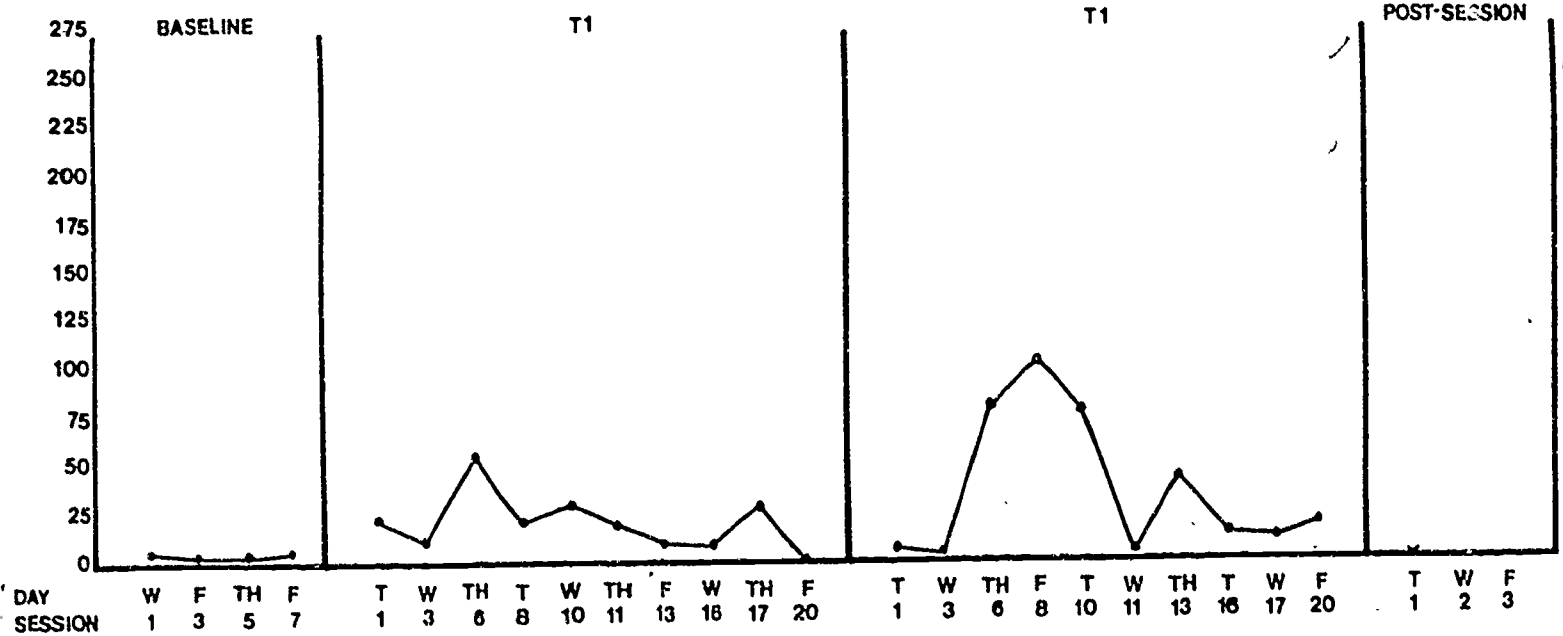
MEASUREMENT : WEIGHT BEARING -SECONDS
BILATERAL REACH-GRASP- FREQUENCY

SUBJECT 2

WEIGHT BEARING :92% RELIABILITY




BILATERAL REACH-GRASP :93.7% RELIABILITY

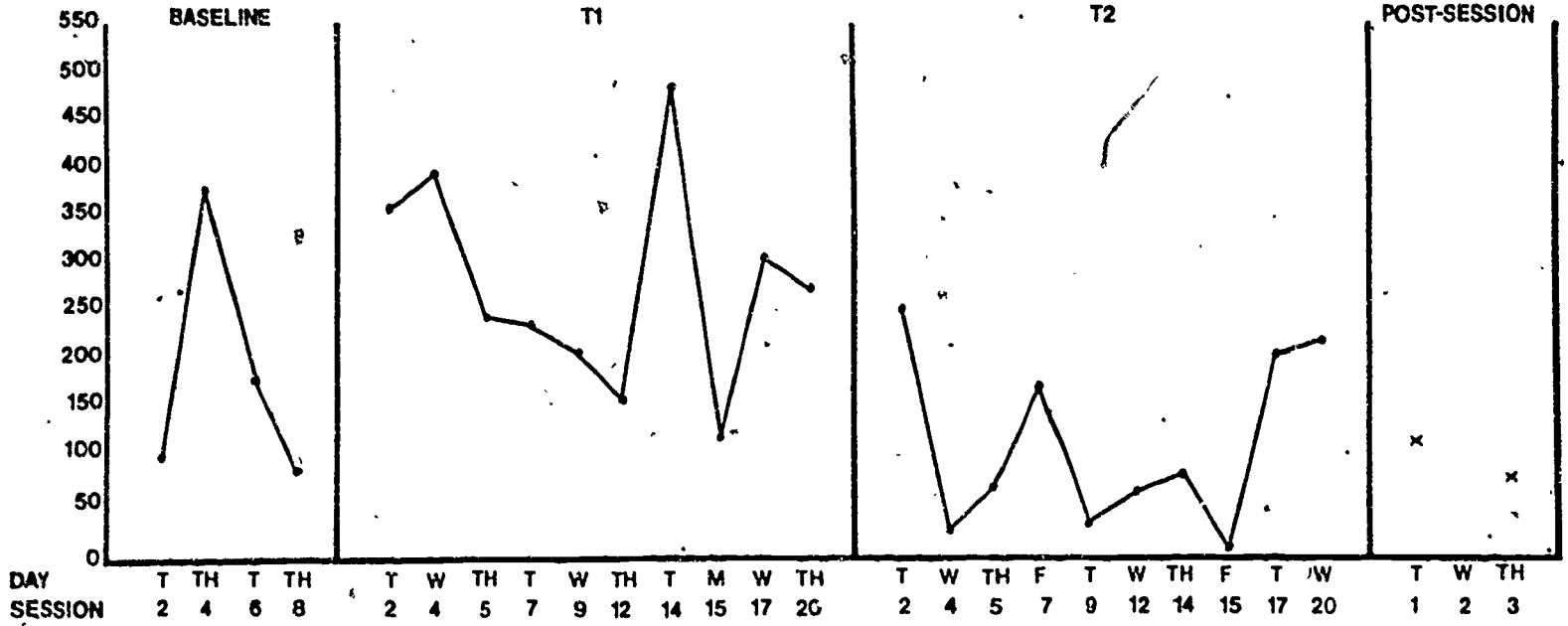



RESPONSE : APPROXIMATIONS

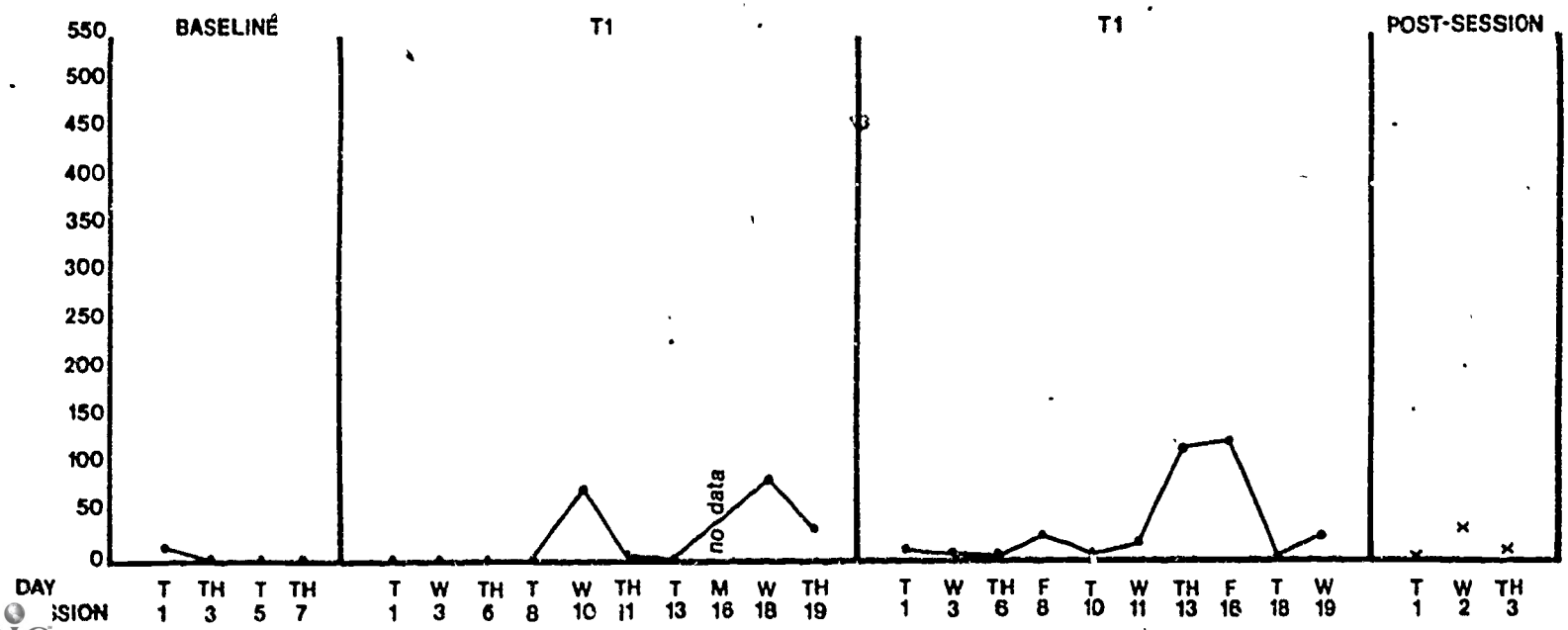
MEASUREMENT : SECONDS

SUBJECT 1

BILATERAL REACH-GRASP :92% RELIABILITY




WEIGHT BEARING :89.8% RELIABILITY

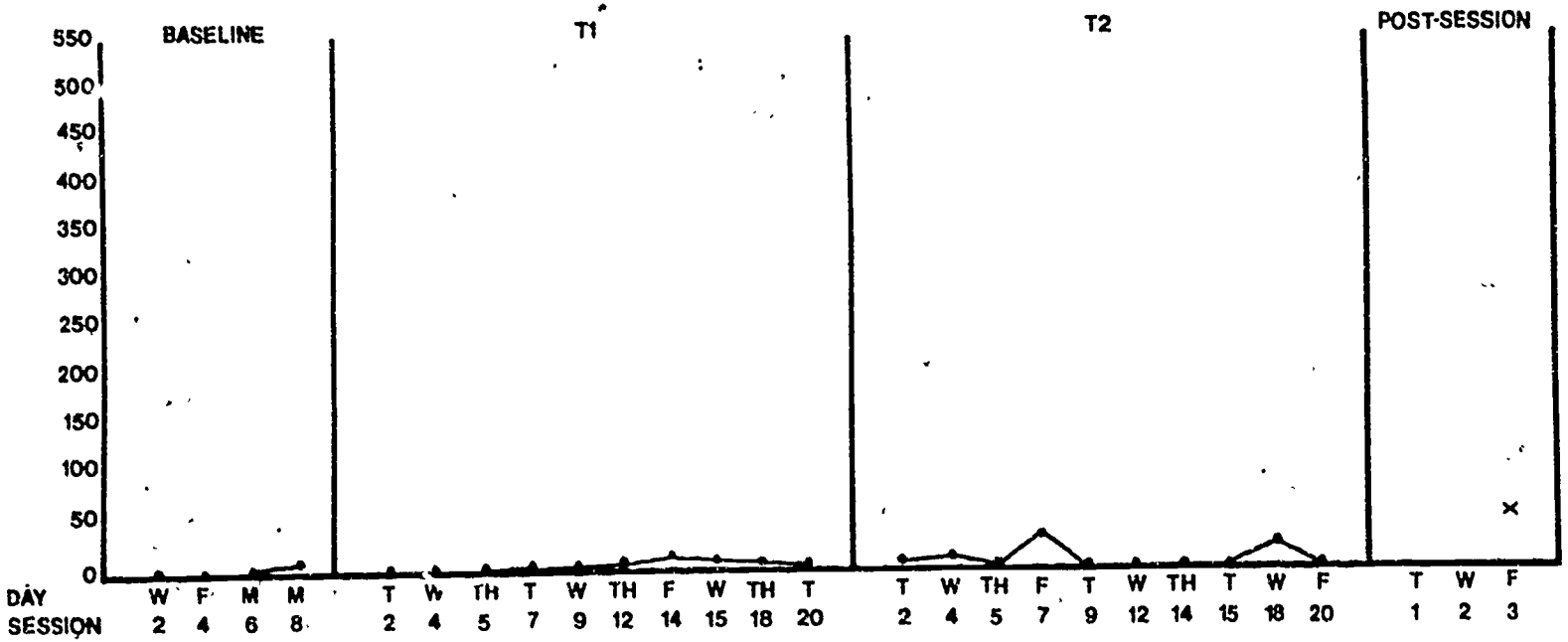



RESPONSE : VISUAL FIXATION

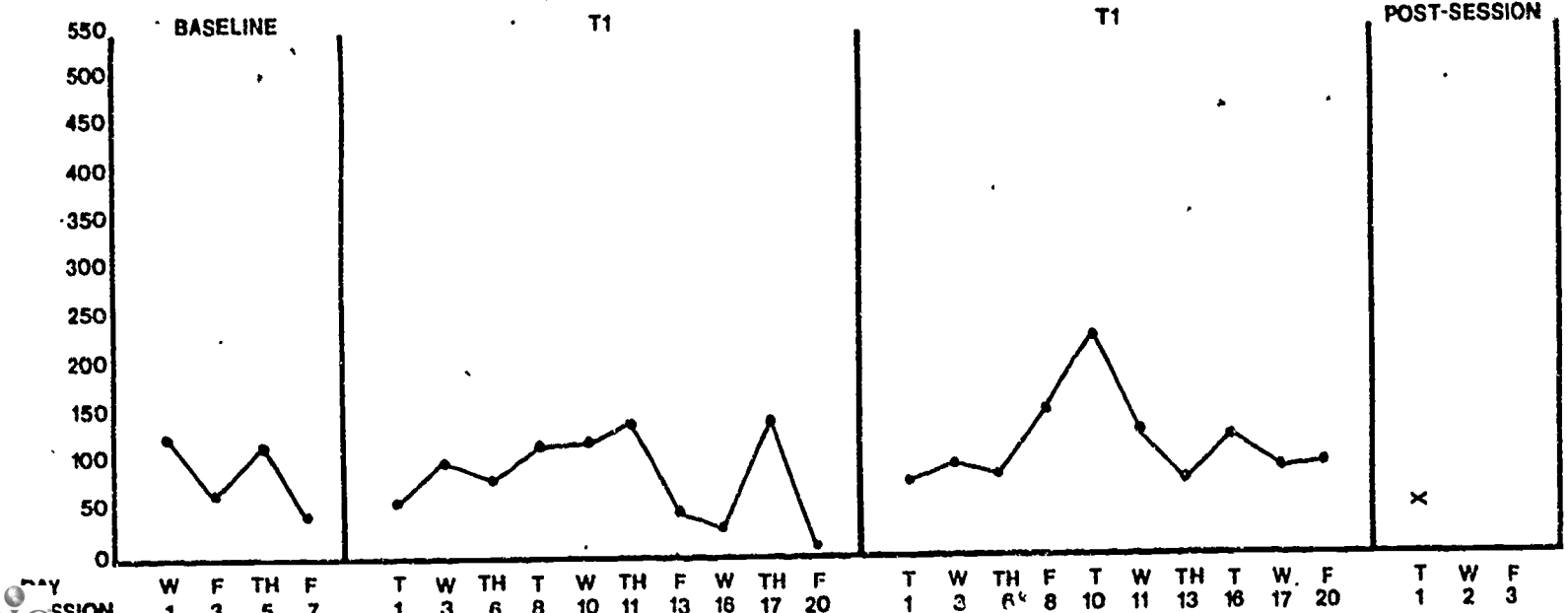
MEASUREMENT : SECONDS

SUBJECT 2

WEIGHT BEARING :92.2% RELIABILITY




BILATERAL REACH-GRASP :94% RELIABILITY



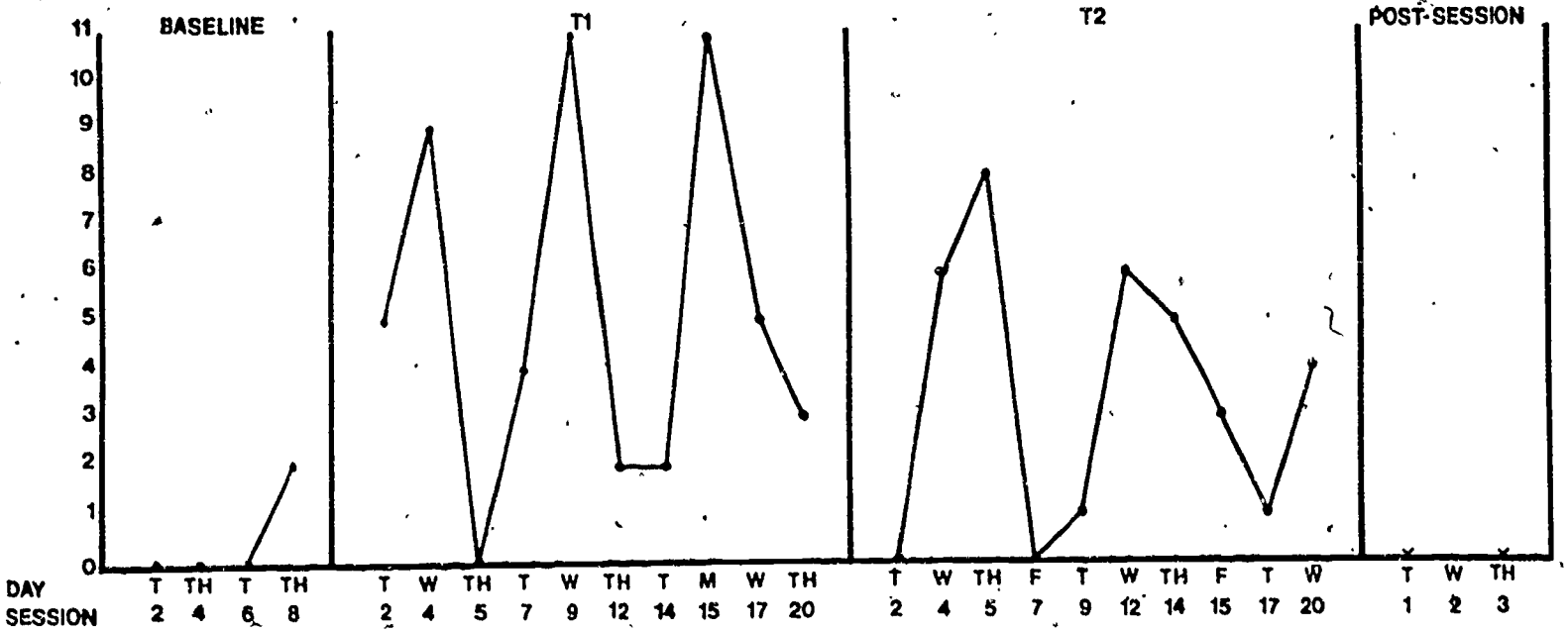

RESPONSE : VISUAL FIXATION

MEASUREMENT : SECONDS

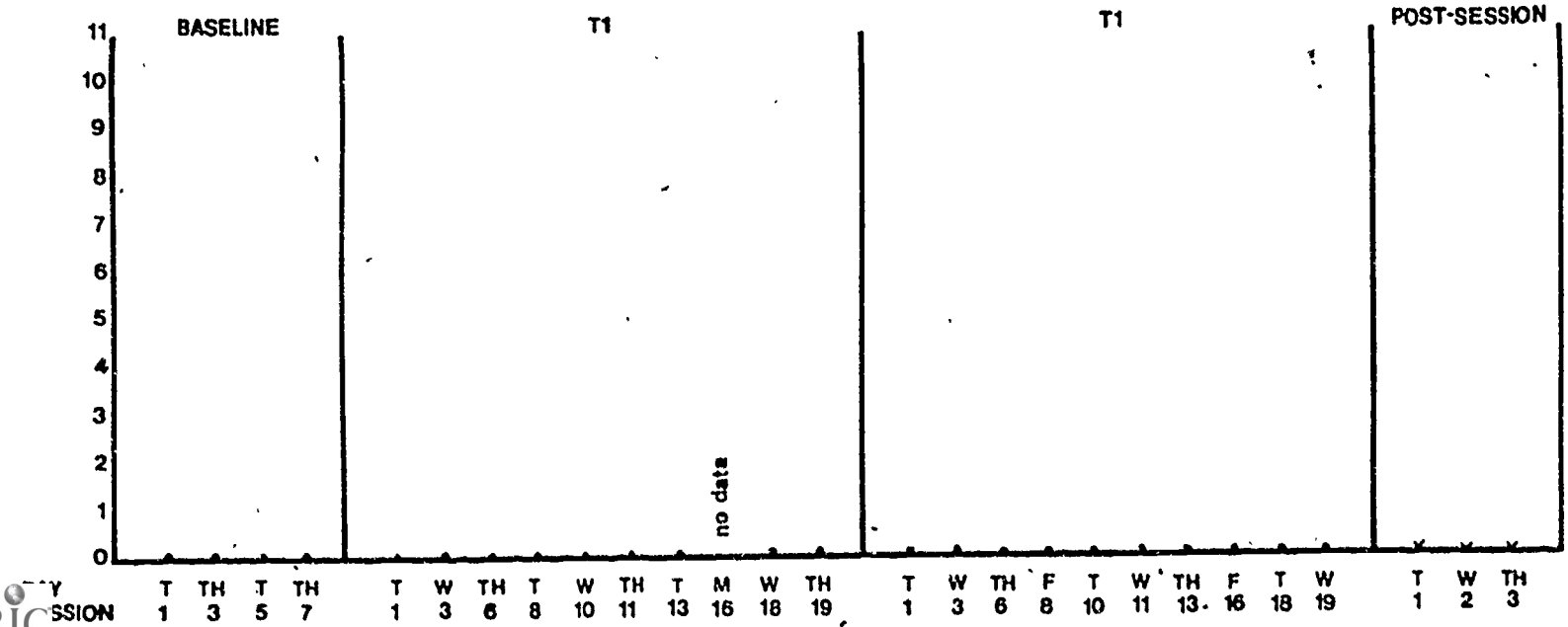
38

SUBJECT 1

BILATERAL REACH-GRASP :91% RELIABILITY




WEIGHT BEARING :100% RELIABILITY

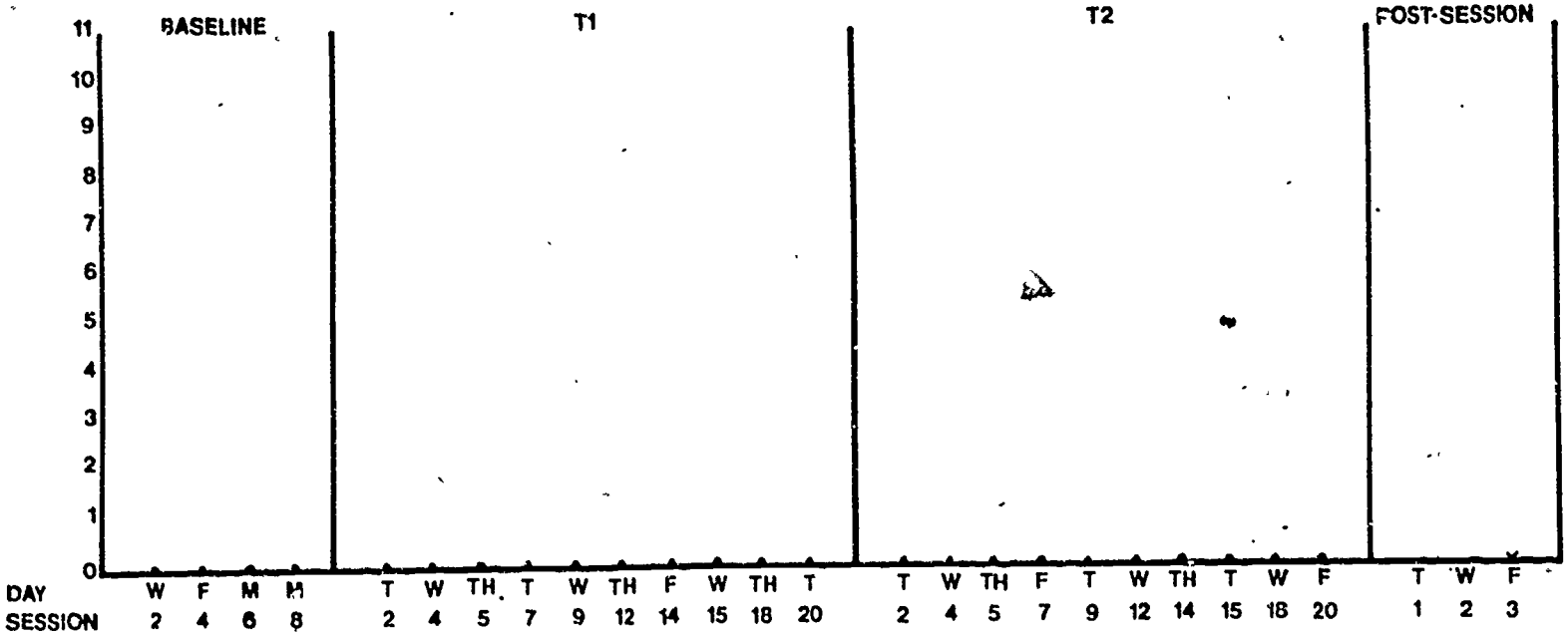



RESPONSE : SMILING

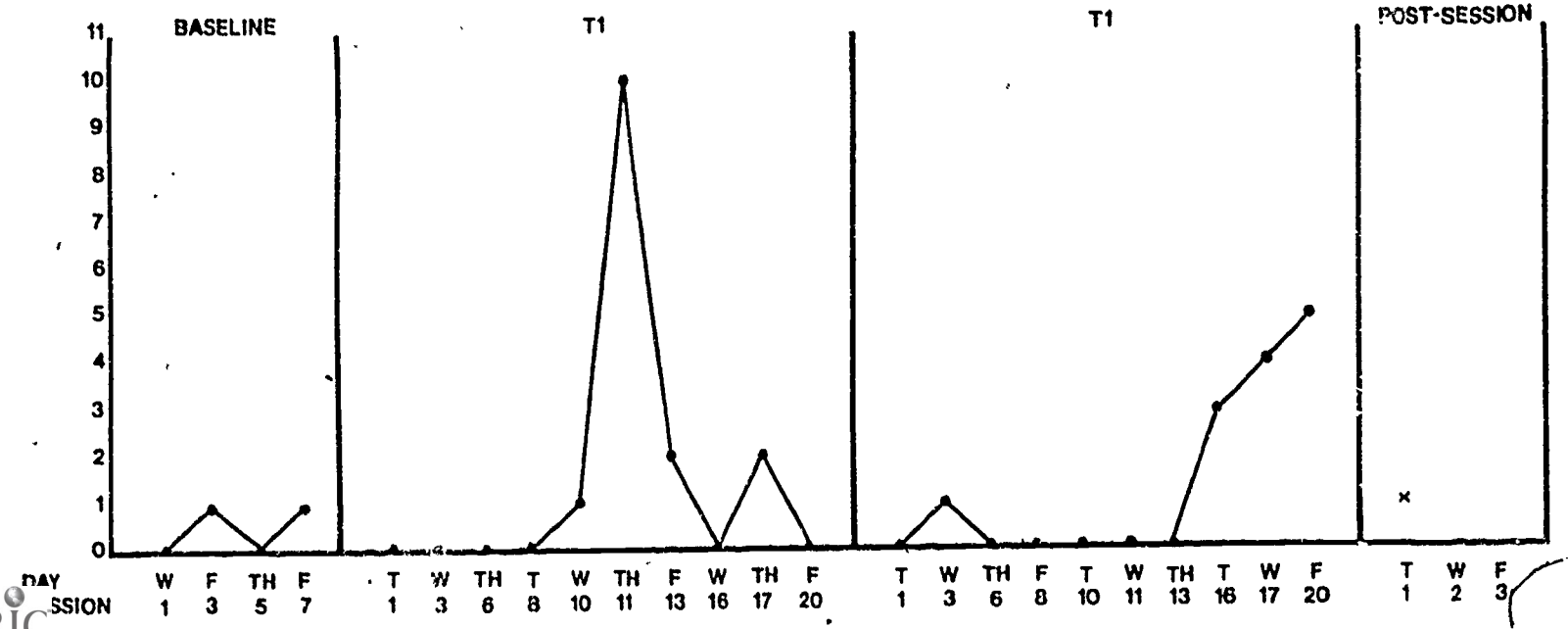
MEASUREMENT : FREQUENCY

SUBJECT 2

WEIGHT-BEARING : 100% RELIABILITY




BILATERAL REACH-GRASP : 93.6% RELIABILITY



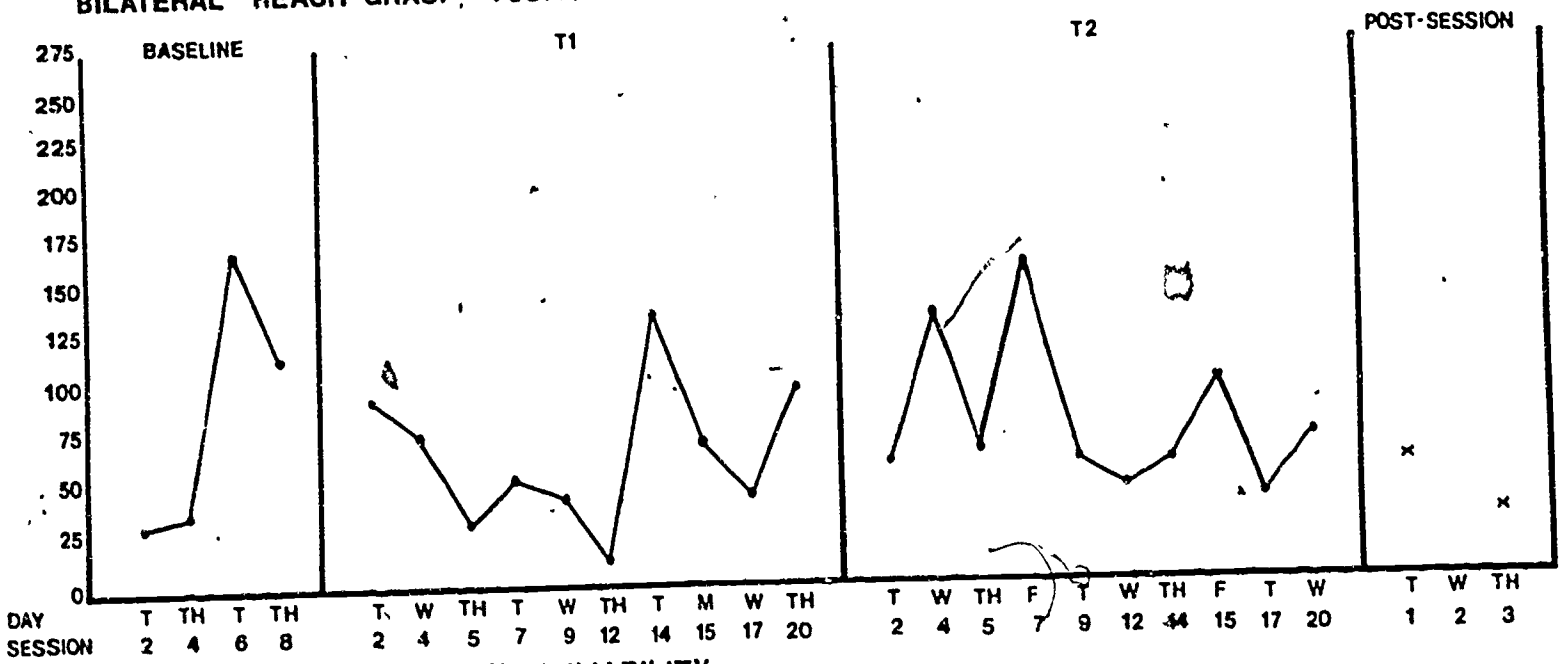

RESPONSE : SMILING

MEASUREMENT : FREQUENCY

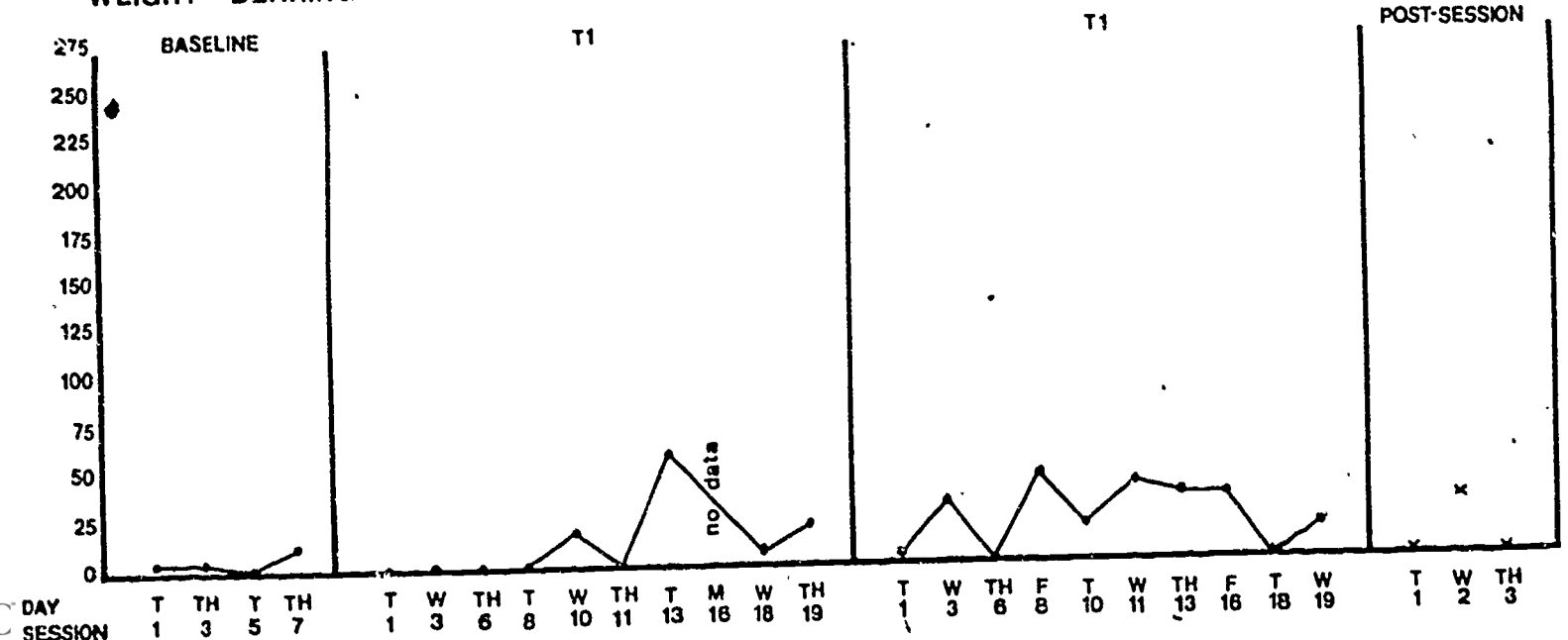
40

SUBJECT 1

BILATERAL REACH-GRASP : 93.4% RELIABILITY




WEIGHT BEARING : 89.7% RELIABILITY

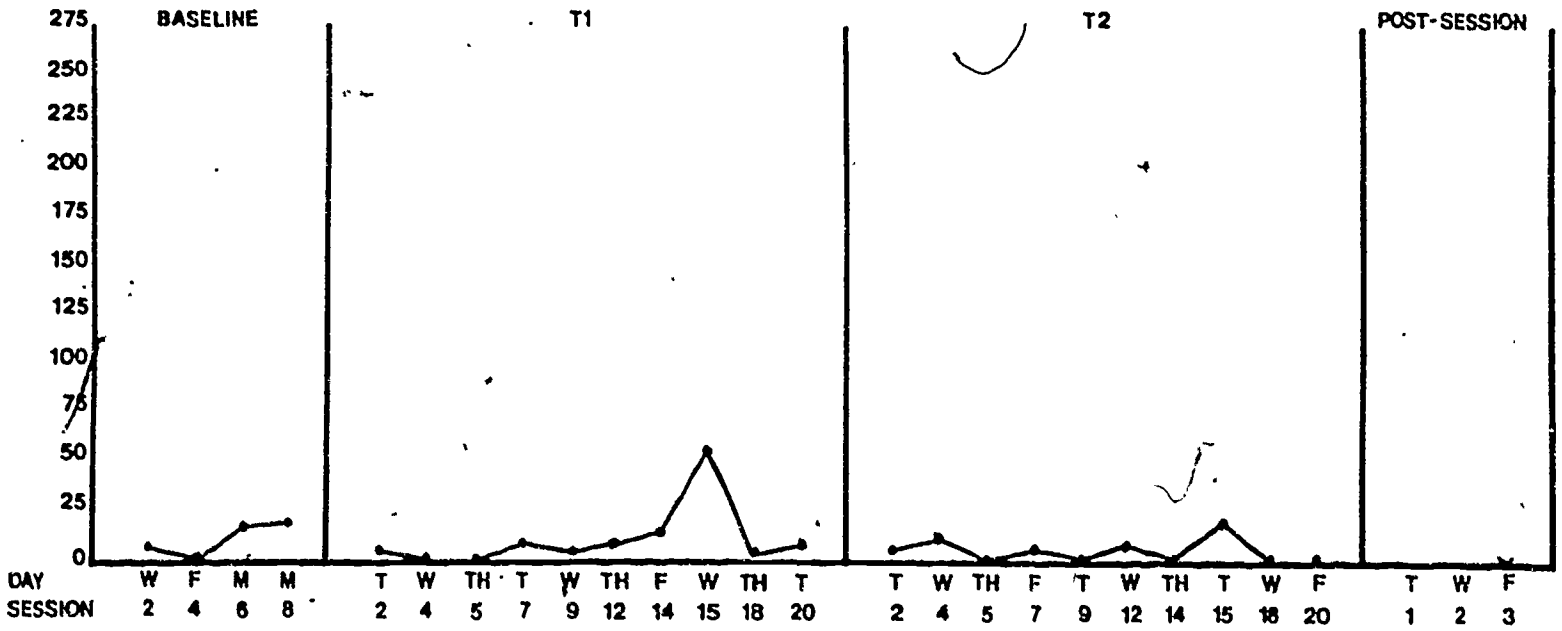



RESPONSE : VOCALIZATIONS

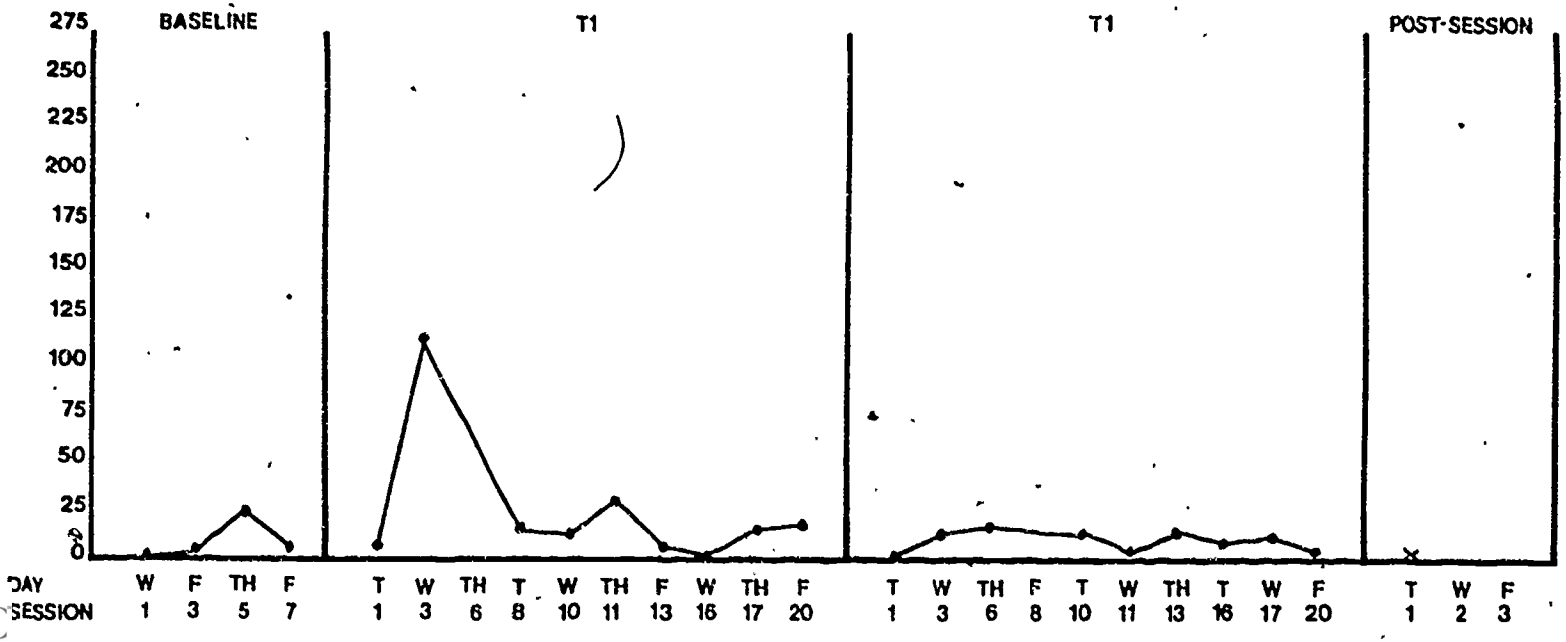
MEASUREMENT : FREQUENCY

SUBJECT 2

WEIGHT BEARING :89.2% RELIABILITY




BILATERAL REACH-GRASP :91.8% RELIABILITY

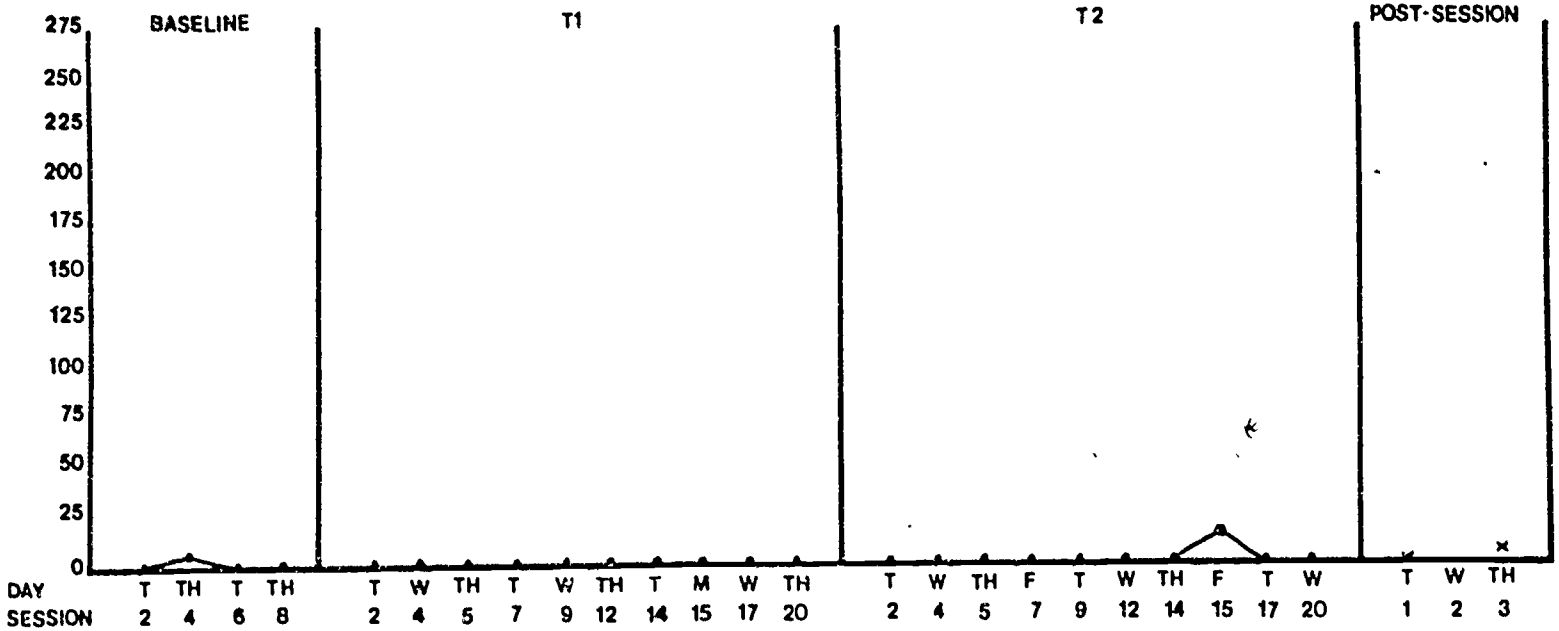



RESPONSE : VOCALIZATIONS

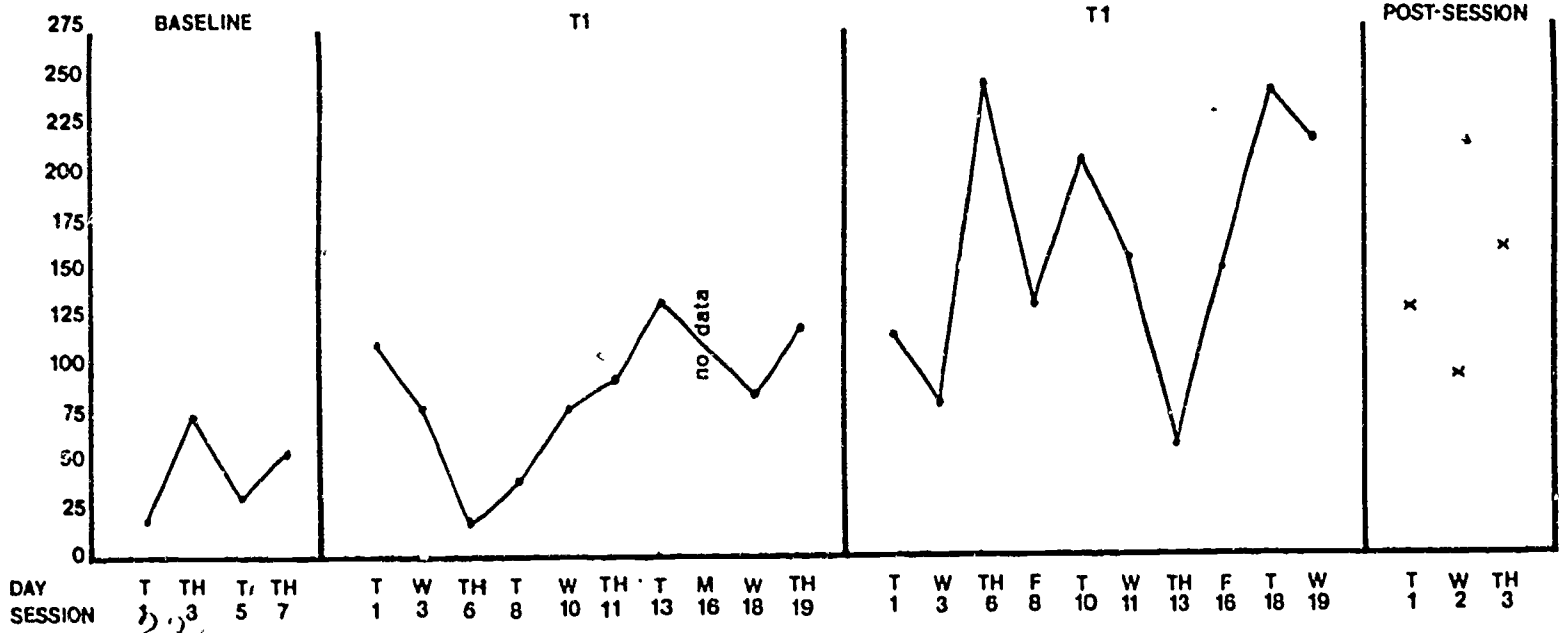
MEASUREMENT : FREQUENCY

SUBJECT 1

BILATERAL REACH-GRASP : 91.8% RELIABILITY




WEIGHT BEARING :90.5% RELIABILITY

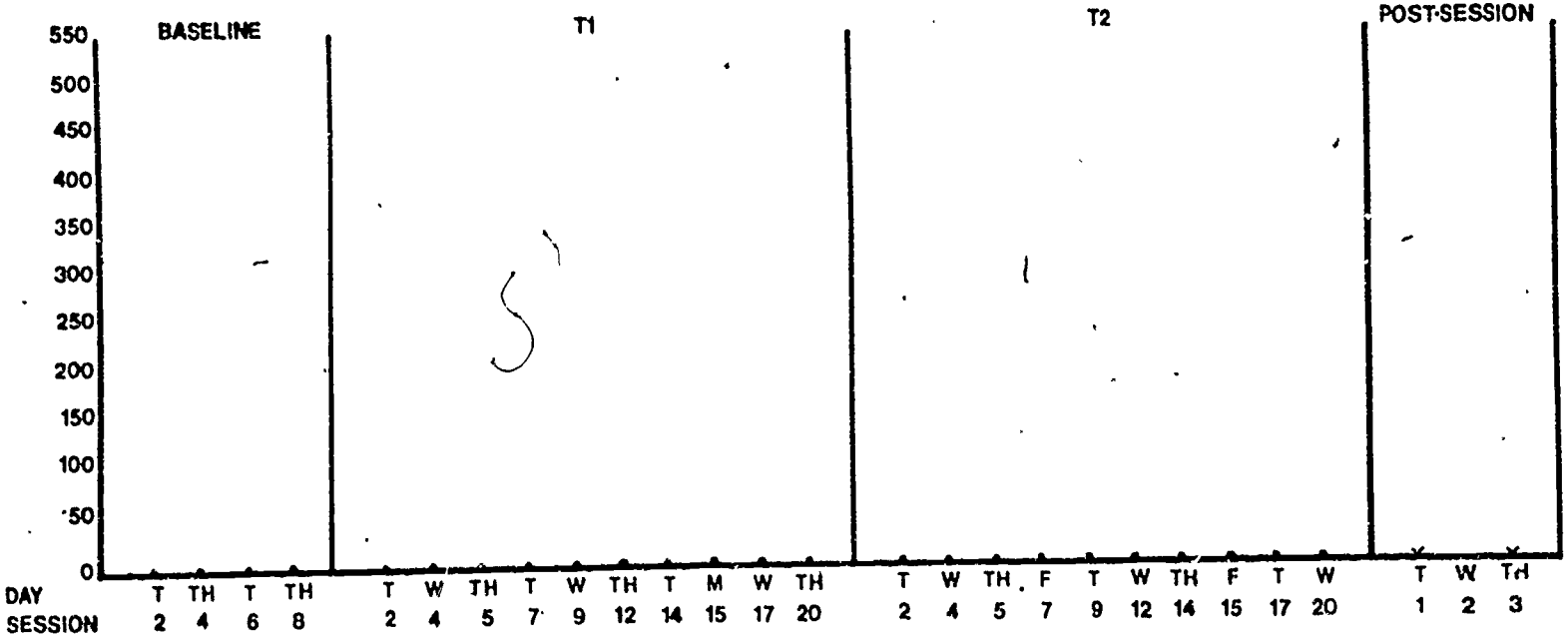



RESPONSE : FUSSING

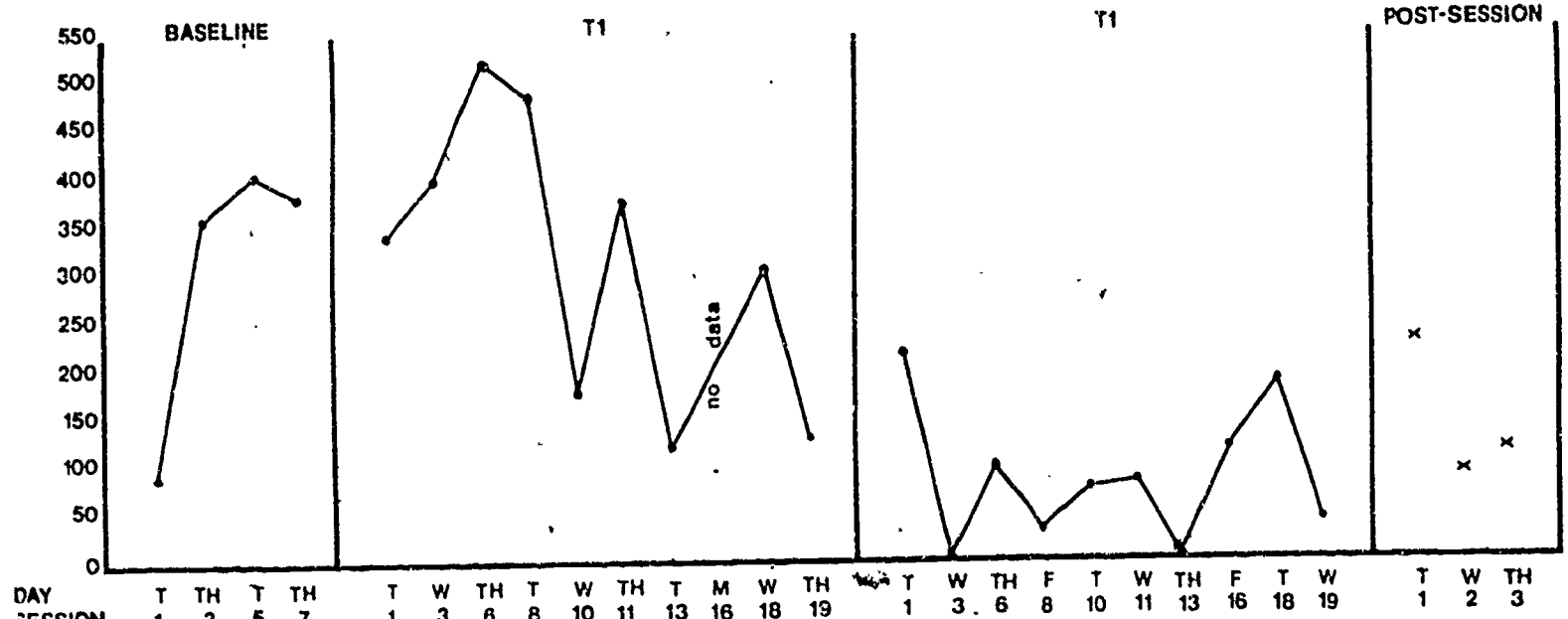
MEASUREMENT : FREQUENCY

SUBJECT 1

BILATERAL REACH-GRASP :100% RELIABILITY




WEIGHT BEARING :92.8% RELIABILITY

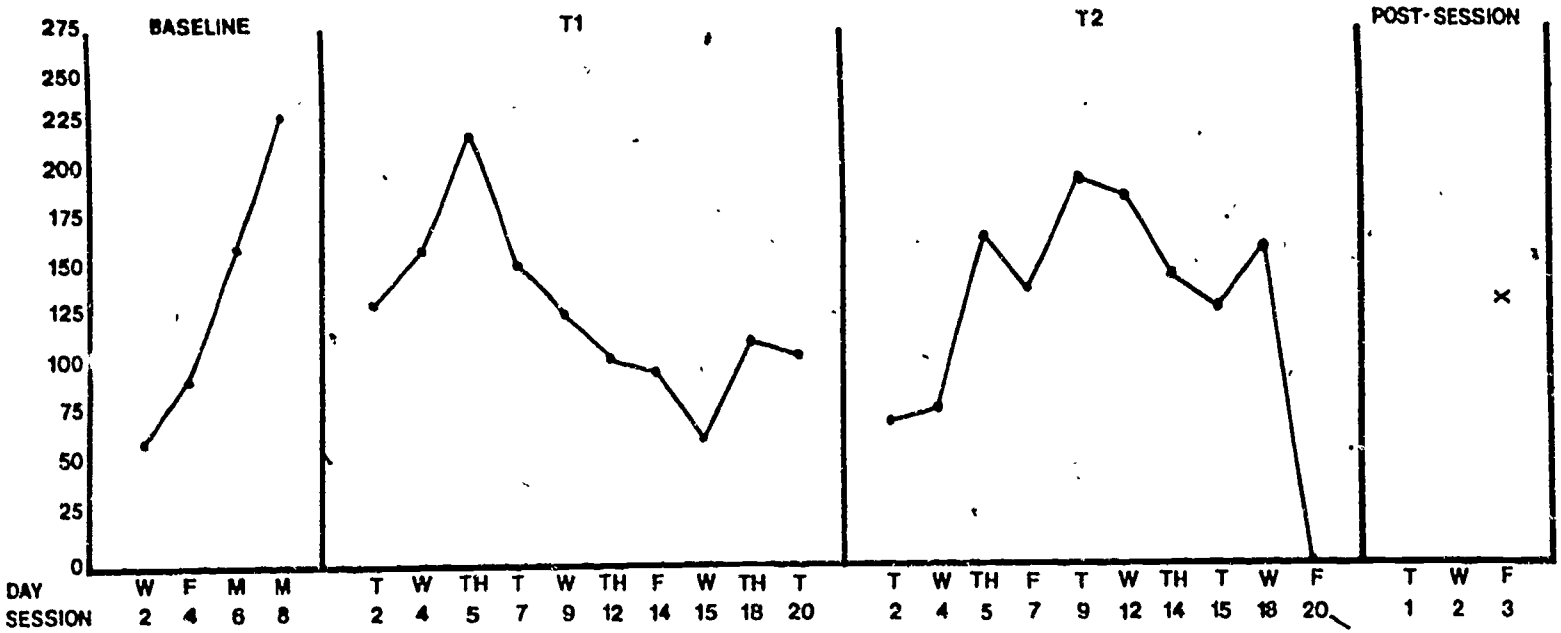



RESPONSE : CRYING

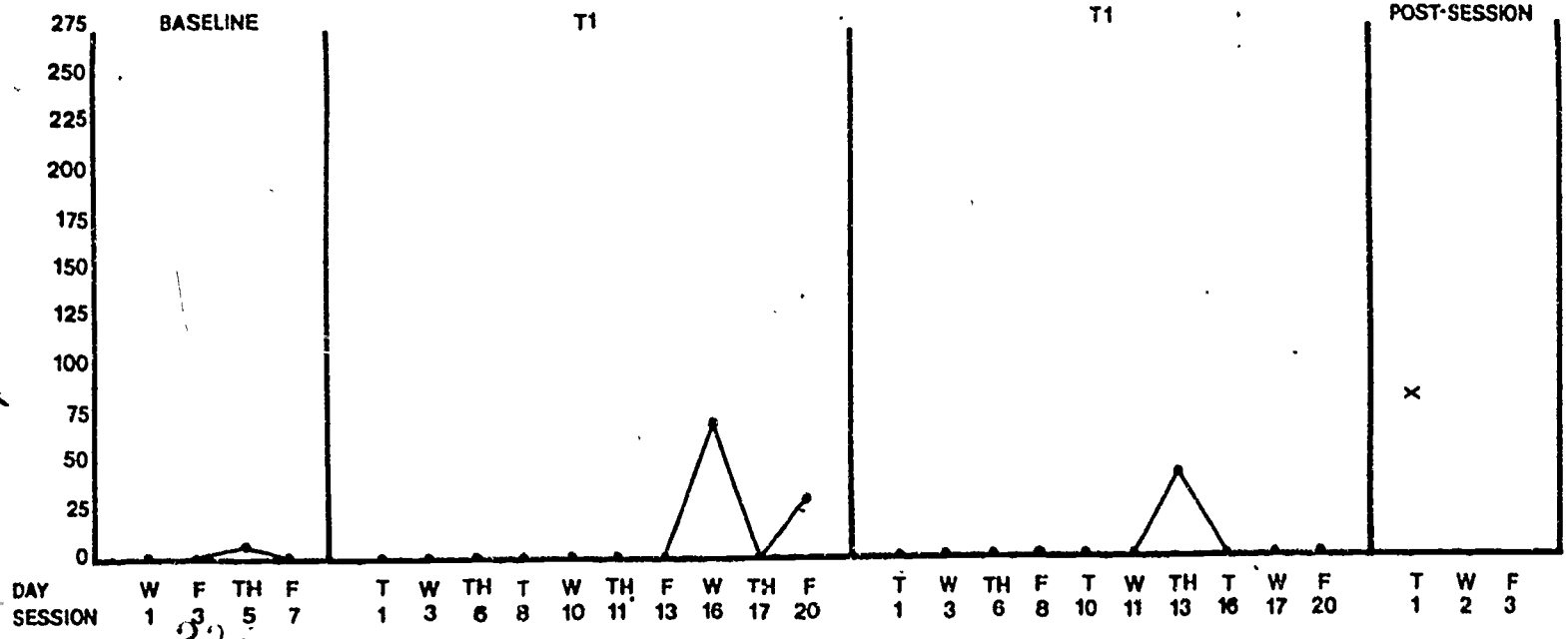
MEASUREMENT : SECONDS

SUBJECT 2

WEIGHT BEARING :84.6% RELIABILITY




BILATERAL REACH-GRASP :84.1% RELIABILITY

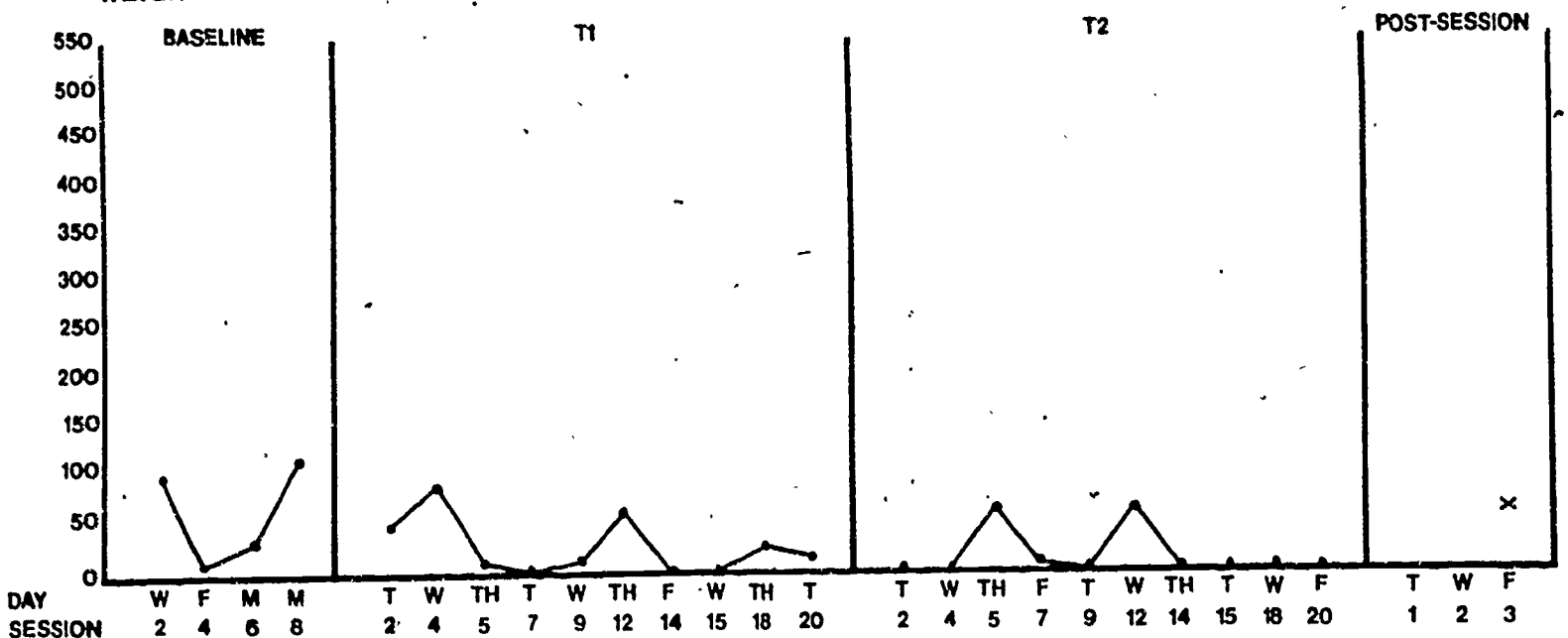



RESPONSE : FUSSING

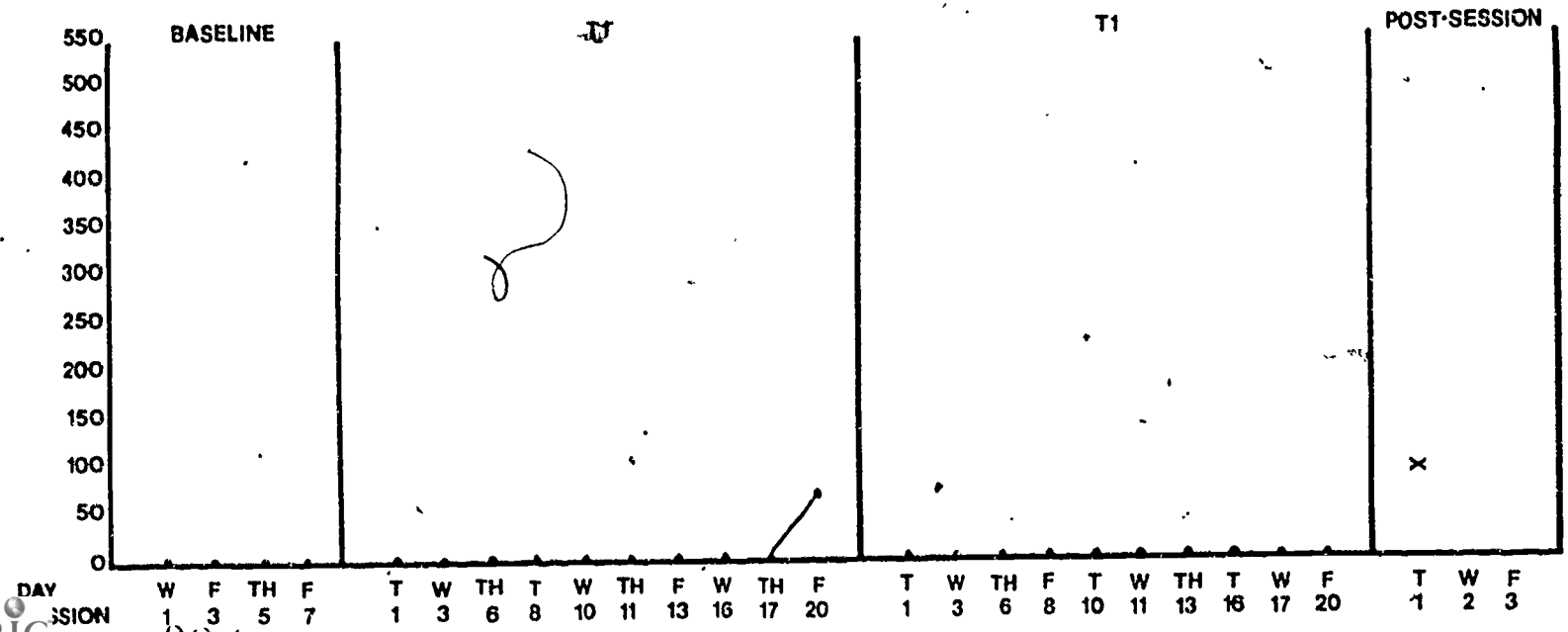
MEASUREMENT : FREQUENCY

SUBJECT 2

WEIGHT BEARING :89.1% RELIABILITY




BILATERAL REACH-GRASP :93.9% RELIABILITY




RESPONSE : CRYING

MEASUREMENT : SECONDS

subject 2, except that both of these responses dropped out at the end of the experimental treatment (2) phase. (See figures 13 and 14.)

State of Arousal

Changes in state during training with the reach/grasp equipment were slight for subject 1, and did not alter differentially according to training. This subject generally trained in alert states. Subject 2, who received only standard training with the reach/grasp behavior, tended to become fussy or sleepy during sessions on this equipment.

Changes in state during training with the weight bearing behavior were more dynamic for both subjects. Subject 1, who was trained using only standard procedures, turned from alert to crying and/or fussing states. Subject 2, who was trained using standard and then experimental treatment procedures, became progressively more drowsy toward the end of training sessions (See tables 1 and 2.)

The results of this investigation do not suggest that one teaching approach is far superior than the other. Yet most motor and/or approximated motor responses elicited under experimental treatment conditions were maintained, providing some evidence to support the claim that response-contingent training with learning equipment may produce more lasting effects.

Though visual, smiling and vocal responses did not vary with respect to treatment strategy, they

## STATE OF AROUSAL

Subject 1

| Bilateral Reach/Grasp | | Weight Bearing | |
|---|---|---|---|
| Baseline | | Baseline | |
| Initial | Final | Initial | Final |
| 4 | 4 | 4 | 6 |
| 4 | 4 | 4 | 6 |
| 4 | 4 | 4 | 6 |
| 4 | 4 | 4 | 6 |
| Treatment 1 | | Treatment 1 | |
| 4 | 4 | 4 | 6 |
| 4 | 4 | 3 | 6 |
| 4 | 4 | 3 | 6 |
| 5 | 5 | 4 | 6 |
| 4 | 4 | 4 | 6 |
| 5 | 4 | 4 | 5/6 |
| 4 | 5 | 4 | 6 |
| 4/5 | 4/5 | 1 | 1 |
| 3 | 5 | 4/5 | 6 |
| 5 | 5 | 4 | 6/3 |
| Treatment 2 | | Treatment 1 | |
| 4/5 | 4 | 4 | 6 |
| 4/5 | 5 | 4 | 5/6 |
| 4 | 4/5 | 4 | 5/6 |
| 4/5 | 5 | 5 | 4/5 |
| 5 | 4/5 | 4 | 5/6 |
| 4/5 | 4 | 4 | 5/6 |
| 4 | 5 | 4/5 | 5 |
| 4 | 4 | 4 | 5/6 |
| 4 | 4 | 4 | 6 |
| 4 | 4 | 4 | 4/5 |
| Post Training | | Post Training | |
| 4/5 | 4 | 5 | 6 |
| 5 | 4 | 5 | 6 |
| | | 5 | 3 |

## STATE OF AROUSAL

Subject 2

| Weight Bearing | | Bilateral Reach/Grasp | |
|---|---|---|---|
| Baseline | | Baseline | |
| Initial | Final | Initial | Final |
| 4 | 3 | 4 | 4 |
| 3 | 3 | 4 | 4 |
| 4 | 3 | 5 | 2 |
| 4 | 5/6 | 4 | 4 |
| Treatment 1 | | Treatment 1 | |
| 4 | 3 | 4 | 3 |
| 4 | 6 | 4 | 4 |
| 4 | 4 | 4 | 4 |
| 4 | 5 | 5 | 4 |
| 4 | 2 | 5 | 5 |
| 4 | 3 | 3 | 4 |
| 5 | 2 | 5 | 4 |
| 3/4 | 3/4 | 3 | 2 |
| 5 | 3 | 4 | 4 |
| 4 | 3 | 5 | 2 |
| Treatment 2 | | Treatment 1 | |
| 4/5 | 3 | 5 | 2 |
| 4 | 3 | 4/5 | 4 |
| 5 | 6 | 5 | 5 |
| 5 | 3 | 4 | 4 |
| 4/5 | 3 | 5 | 4 |
| 5/6 | 3 | 4 | 3 |
| 5 | 3 | 3 | 4 |
| 5 | 4/5 | 4 | 4/5 |
| 5 | 5/6 | 5 | 3 |
| 5 | 2 | 4/5 | 4 |
| Post Training | | Post Training | |
| 5 | 3 | 6 | 5 |
| 5 | 3 | | |

may have been more difficult to achieve on the weight bearing equipment because of the positioning required to perform the motor behavior.

Fussing and crying occurred almost exclusively during weight bearing training. For subject 1, fussing eventually began to replace crying. For subject 2, both fussing and crying decreased together at the end of the last treatment phase (2).

Changes in state may have also been influenced by the type of apparatus in addition to the training procedure. Subject 1 maintained alert states under the treatment 2 strategy on the reach/grasp equipment, while continuing to fuss and cry on the weight bearing equipment under standard training conditions. Subject 2, who received only standard training on the bilateral reach/grasp behavior, changed from alert to fussing or sleeping states. This same subject, when weight bearing under treatment 2 conditions, showed decreased rates of fussing and crying by the end of the phase.

Reliability

Reliability was calculated across all conditions for each subject and response, and ranged from 84.1% to 100%. (Exact figures included on graphs.).

## CHAPTER V

## Discussion

Some increases in motor and/or approximated behavior were exhibited by the experimental subjects under training in each treatment phase. The increases, were, in most instances, more substantial under the contingency (treatment 2) strategies. This finding may either represent slight treatment effects, maturation, or the extra amount of practice the subjects received with the responses in prior training (treatment 1). Visual inspection of the data does, however, suggest another difference in the effects of the two treatment strategies. Generally, under treatment 1 conditions, the initial increase in motor and/or approximation behavior was followed by a steady decrease toward the end of the treatment phase. Under the treatment 2 conditions, the experimenter noted an increase of approximation behavior following prompting procedures, and, as the data confirms, comparatively high rates of approximated behavior throughout subsequent training. (These responses were typically maintained in post-training sessions.) Possibly, the maintenance of responses over treatment 2 training conditions was due to the subjects' continued interest in

activating the stimulus. If this were in fact true, the infants may have been actively and intentionally seeking to repeat the action-outcome pairing. The effort may be interpreted as an attempt to exercise control over environmental phenomena. Theoretically, then, the infants were engaged in a learning process, albeit in the absence of adequate reinforcement (approximations) for their persistence. Subject 2 eventually learned to engage the light display by employing the targeted weight bearing motor response. The same subject apparently lost interest under continued treatment 1 conditions with the bilateral reach/grasp equipment. Subject 1 did not acquire the targeted motor behavior, but did exhibit increased and sustained approximated responses during the treatment 2 phase.

Difficulties in ascertaining the exact causes of discrepancies in responding under different treatment conditions were due to both intervening variables and flaws in methodology that were not foreseen. They include:

1) insufficient training time

> Although the training sessions lasted for a 10 minute duration, they occurred only one time per day for each response. A more efficient, and possibly productive arrangement might have entailed reducing the treatment time and adding more sessions per day. This schedule may have also guarded against the possible counter effects produced by unreinforced approximation behavior and negative responses to the learning equipment.

2) insensitivity of learning equipment to approximated behavior

The learning equipment was unfortunately and perhaps detrimentally, insensitive to approximated target responses. This shortcoming prevented reinforcement for near-accurate behavior, and may have contributed to negative responses toward the learning equipment such as fussing and crying. It may have also contributed to the changes in state resulting in sleeping, possibly indicative of frustration.

3) satiating effects of light display under treatment 1 conditions

Light displays under treatment 1 conditions were continual. The reinforcement for the standard approaches consisted of tactile and auditory praise. Satiating visual effects may have contributed to off-task behavior, for example, hand-gazing, and hindered motor and associated positive responses.

4) difference in strength of reinforcement under different treatment conditions

The difference between the strength of treatment 1 reinforcement (tactile and auditory praise) and treatment 2 (response-contingent light displays) was not controlled for, and may be responsible for the differential behavior seen in training.

5) practice effects

The advantage of practice with targeted behavior under treatment 1 may have contributed to accelerated responding under treatment 2 conditions.

6) percussing effects (postural drainage) of weight bearing equipment when experimental infants were congested

The subjects both had colds during the course of the investigation. The weight bearing equipment required that they be positioned prone over a chest support. When not weight bearing, the subjects' heads were typically postured down toward the switch platform. This caused drainage of congested area from upper respiratory tract through nasal and oral cavities.

7) dislike of weight bearing equipment

> Neither subject appeared to enjoy the weight bearing equipment. No smiling occurred in any phase for either subject, and fussing and crying responses were comparatively high. It was not necessary for the subjects to use head control during treatment 1 to be reinforced for the targeted weight bearing response. It was, however, required to view the continuous light stimulus during treatment 1 and response-contingent light display during treatment 2. This added dimension, the fact that approximated responses were not consequated, and the percussing effects of the equipment when the subjects were congested may have all contributed to the high incidences of negative behavior during weight bearing treatment sessions.

The subjects selected for this study had both a limited awareness of cause and effect relationships and an absence of object-related schemata in their repertoire. A more salient and perhaps successful reinforcer might have involved response-contingent interactions with the primary caregiver. Consideration and control of these variables would enable isolation of experimental variables and add clarity to the findings.

Although the generalization of responses was not systematically probed, information gathered through informal observations revealed that behavior acquired by both subjects during treatment generalized into other activities, such as home and center interactions and independent, unstructured play situations. These effects were most apparent as the result of training the bilateral reach/grasp response. Behavior that subsequently emerged included grasping, banging objects at midline, holding,

visual inspection, and increased visual attending with both people and objects. Additionally, it seemed instrumental in decreasing stereotypical behavior in one of the subjects. Weight bearing training appeared to promote a quadraped response in subject 2, and improved protective responses in both subjects.

For the experimental, severely handicapped infants, contingency training offered a viable alternative to standard teaching procedures. It may have additionally generated further environmental exploration, through introducing response-contingent interactions and the option of active participation and control.

It is evident that contingency training utilizing learning equipment is at least a feasible strategy for facilitating and maintaining motor skills and their approximations. At most, such training may advance the understanding that an action produces an effect. The informal observations of generalized behavior during this investigation seem to indicate that response-contingent training served to encourage further exploration of the environment.

The advantages then, of motor training on response-contingent learning equipment include increased and sustained rates of responding, the opportunity for active control over actions and their consequences, and the possibility of promoting the establishment of cause and effect relationships. Since learning and motiva-

tion theory suggest that human growth and development is strongly influenced by active, competent interactions with the environment, teaching using learning equipment may represent a progressive and time efficient supplement to developmental programming for the young severely handicapped population.

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# APPENDICES

1. Parental Consent Form
2. Diagram of Classroom
3. Brazelton's States (Adapted)
4. Pilot Procedures
5. Pretest Procedures
6. Treatment 1 Procedures.
7. Treatment 2 Procedures
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   - Weight Bearing
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   - Bilateral Reach/Grasp
   - Bilateral Reach/Grasp Wiring

Parental Consent Form

# Parent Permission Form

Research Project: Teaching Motor Responses to Multi-Handicapped Infants Using Learning Devices

I am aware that the purpose of this investigation is to compare the teaching method presently used in the classroom and in my home with a new strategy employing simple contingency devices.

I agree that the particular motor responses to be trained are not presently in my child's repertoire and I see the relevance of these behaviors in my child's developmental progression.

I understand that all records will be subject to the same standards of confidentiality as the other records in the project, that real names will not be used, and that videotapes will be viewed only by the research personnel participating in this project and then destroyed after a one year period.

I will permit my child to be transported in a private car to and from school for the training sessions.

I realize that I am free not to participate in this project, and that if I agree, I have the option of withdrawing my child at any time.

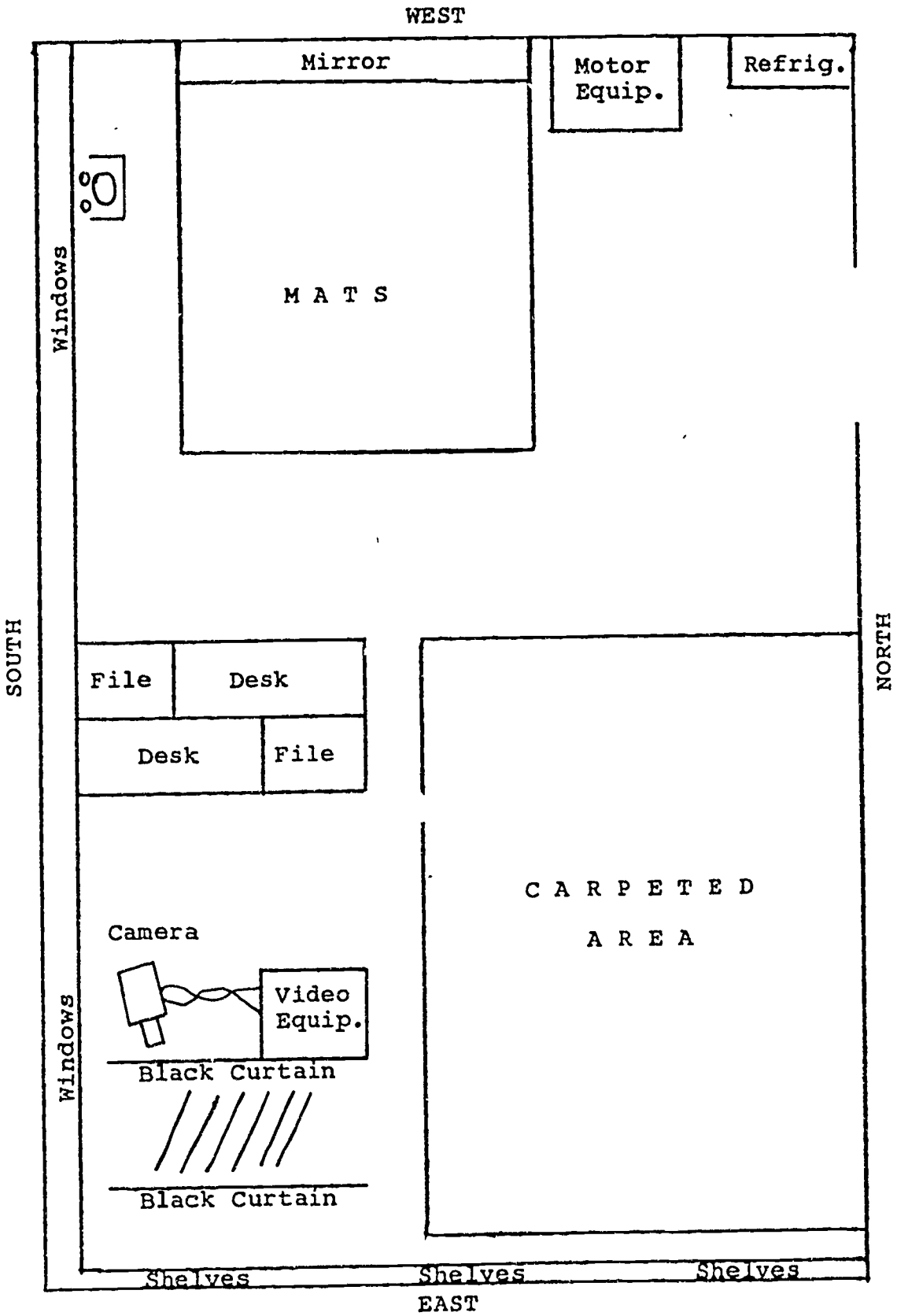
_____ Child's Name

_____ Parent's Signature

_____ Parent's Signature

_____ Date

Diagram of Classroom


WEST
Mirror
Motor Equip.
Refrig.
Windows
M A T S
SOUTH
NORTH
File
Desk
Desk
File
C A R P E T E D
A R E A
Camera
Video Equip.
Black Curtain
Black Curtain
Windows
Shelves
Shelves
Shelves
EAST

Brazelton's States (Adapted)

Coding State of Arousal: (T. Berry Brazelton Neonatal Behavioral Assessment Scale 1976).

States of Arousal:

Awake States:

3. Drowsy or semi-dozing: Eyes may be open or closed, eyelids fluttering; activity level variable, with interspersed, mild startles from time to time; reactive to sensory stimuli, but response often delayed; state change after stimulation frequently noted, movements are visually smooth. Fussing may or may not be present.

4. Alert, with bright look; seems to focus attention on source of stimulation, such as an object to be sucked, or a visual or auditory stimulus; impinging stimuli may break through, but with some delay in response. Minimal motor activity.

5. Eyes open; considerable motor activity, with thrusting movements of the extremities, and even a few spontaneous startles; reactive to external stimulation with increase in startles or motor activity, but discrete reactions difficult to distinguish because of high activity level. Fussing may or may not be present.

6. Crying: Characterized by intense crying which is difficult to break through with stimulation.

Sleep States:

1. Deep sleep with regular breathing, eyes closed, no spontaneous activity except startles or jerky movements at quite regular intervals: external stimuli produce startles with some delay; suppression of startles is rapid, and state changes are less likely than from other states. No eye movements.

2. Light sleep with eyes closed; rapid eye movements can be observed under closed lids; low activity level, with random movements and startles or startle equivalent; movements are likely to be smoother and more monitored than in deep sleep; responds to internal and external stimuli with startle equivalents, often with a resulting change of state. Respirations are irregular, sucking movements occur off and on.

Pilot Procedures

Pilot

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Reach/Grasp STEP: Bilateral

BEHAVIORAL OBJECTIVE: Subject will, when positioned in a supported sit facing the apparatus, reach towards and grasp steering wheel (one hand on either side) in bilateral movements

CRITERION:

| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment | (1) Connect contingent display | (1) Subject grasps steering wheel bilaterally one hand on either side | (1) Contingent light display | (1) Record frequency of response |
| | (2) Padding behind shoulders to facilitate reach | (2) No or incorrect response within 1 minute time period | (2) Full hand prompt lasting 3 seconds | |
| POSITION OF CHILD | | | | |
| Supported sitting in carrier | (3) Initial 3 second full hand prompt | (3) No or incorrect response following second prompt | (3) None | |

Pilot

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Weight Bearing STEP: Extended Arms

BEHAVIORAL OBJECTIVE: Subject will bear equal weight on extended arms while in a prone position partially supported at chest

CRITERION:

| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment<br><br>POSITION OF CHILD<br>Prone<br>Chest supported by roll<br>Seat belt fastened around waist | (1) Connect contingent visual display<br>(2) Position subject<br>(3) Administer initial 3 second shoulder prompt | (1) Subject bears weight on extended arms<br>(2) Subject does not respond or responds incorrectly within 1 minute<br>(3) Subject does not respond or responds incorrectly | (1) Contingent light display<br>(2) Repeat 3 second shoulder prompt<br>(3) None | (1) Record duration of response |

# Pretest Procedures

Pretest

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Reach/Grasp STEP: Bilateral

BEHAVIORAL OBJECTIVE: Subject will, when positioned in a supported sit facing the apparatus, reach towards and grasp steering wheel (one hand on either side) in bilateral movements

CRITERION:

| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment | (1) Noncontingent visual display (continuous display) caused by holding circuit closed on device with clamps | (1) Bilateral reach/grasp to steering wheel | (1) None | (1) Score by observation or number of bilateral reach/grasp responses to wheel |
| POSITION OF CHILD | (2) Padding to facilitate reach - behind elbows, shoulders | (2) No or inappropriate response after 1 minute | (2) Second hand prompt lasting 3 seconds | |
| Supported sitting in carrier | (3) Full hand prompt for 3 second duration | (3) No response or incorrect response after second hand prompt | (3) None | |

Pretest

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Weight Bearing STEP: Extended Arms

BEHAVIORAL OBJECTIVE: Subject will bear equal weight on extended arms while in a prone position partially supported at chest

CRITERION:

| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment | (1) Noncontingent visual display (lights on) | (1) Subject bears weight on extended arms | (1) None | (1) Record duration of response as indicated by light at rear of device |
| | (2) Connect light indicator to signal response at rear of device | (2) Subject does not bear weight or equal weight on extended arms within 1 minute | (2) Administer second 3 second shoulder prompt | |
| POSITION OF CHILD | | | | |
| Prone Chest supported by roll Seat belt holding around waist | (3) Administer initial 3 second shoulder prompt, holding elbows extended | (3) No or incorrect response after second shoulder prompt | (3) None | |

# Treatment 1 Procedures

Treatment 1

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Reach/Grasp STEP: Bilateral

BEHAVIORAL OBJECTIVE: Subject will, when positioned in a supported sit facing the apparatus, reach towards and grasp steering wheel (one hand on either side) in bilateral movements

CRITERION:

| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment<br><br>POSITION OF CHILD<br><br>Supported sitting in carrier | (1) Child is seated, supported at hips with strap<br>(2) Flexors on inside of forearm are tapped 3 times apiece<br>(3) Fingers are given quick stretch 1 time on each palm-up hand<br>(4) Dowels are presented horizontally requiring child to grasp (hand prompt) or fall back (press chest)<br>a) palm-up 3 times<br>b) palm-down 3 times<br>(5) Non-contingent light display | (1) Subject grasps steering wheel one hand or either side in a bilateral movement<br>(2) Subject does not respond or responds incorrectly within 1 minute period<br>(3) Subject does not respond or responds incorrectly | (1) Praise, verbal reinforcement<br>(2) Administer second full hand prompt for 3 second duration | (1) Count frequently of bilateral grasps on steering wheel |

Treatment 1

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Weight Bearing STEP: Extended Arms

BEHAVIORAL OBJECTIVE: Subject will bear equal weight on extended arms while in a prone position partially supported at chest

CRITERION:

| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment<br><br>POSITION OF CHILD<br><br>Prone<br>Chest supported by roll<br>Seat belt fastened around waist | (1) Position subject on forearms in prone position<br>(2) Pull hips upwards and backwards on either side until subject assumes a quadraped position<br>(3) Hold for 3 seconds<br>(4) Lower hips<br>(5) Extend arms and apply pressure to shoulders for 3 seconds<br>(6) Position on learning apparatus<br>(7) Connect noncontingent light display<br>(8) Administer initial 3 second shoulder prompt | (1) Subject bears weight on extended arms<br><br>(2) Subject does not respond or responds incorrectly within a 1 minute time period<br><br>(3) Subject does not respond or responds incorrectly | (1) Praise - verbal reinforcement<br><br>(2) Administer second 3 second shoulder prompt<br><br>(3) None | (1) Record duration of response as indicated by light at rear of device |



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# Treatment 2 Procedures

Treatment 2

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Reach/Grasp STEP: Bilateral

BEHAVIORAL OBJECTIVE: Subject will, when positioned in a supported sit facing the apparatus, reach towards and grasp steering wheel (one hand on either side) in bilateral movements

CRITERION:

| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment | (1) Test contingent visual display | (1) Subject grasps steering wheel bilaterally, one hand on either side | (1) Contingent light display | (1) Record frequency of response by counting occurrence of display |
| POSITION OF CHILD | (2) Padding behind subjects' shoulders and elbows to facilitate reach | (2) No or incorrect response within 1 minute time period | (2) Full hand prompt for 3 second duration | |
| Supported sitting in carrier | (3) Initial 3 second full hand prompt | (3) No or incorrect response following second hand prompt | (3) None | |

Treatment 2

NAME: DATE: PROGRAMMER: Veltman

AREA: Gross Motor PHASE: Weight Bearing STEP: Extended Arms

BEHAVIORAL OBJECTIVE: Subject will bear equal weight on extended arms while in a prone position partially supported at chest

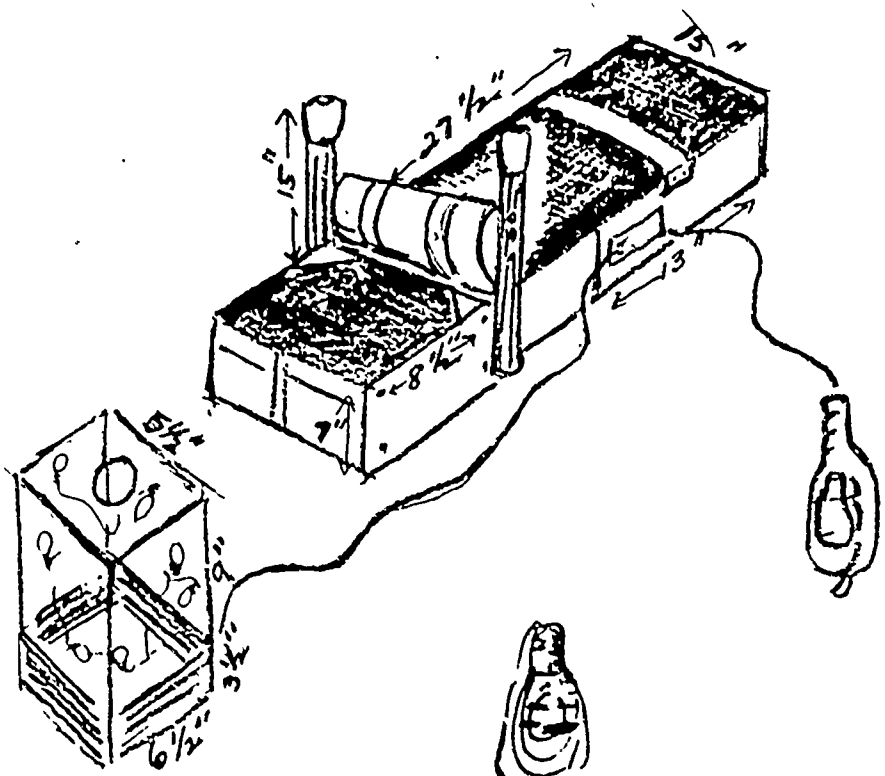
CRITERION:

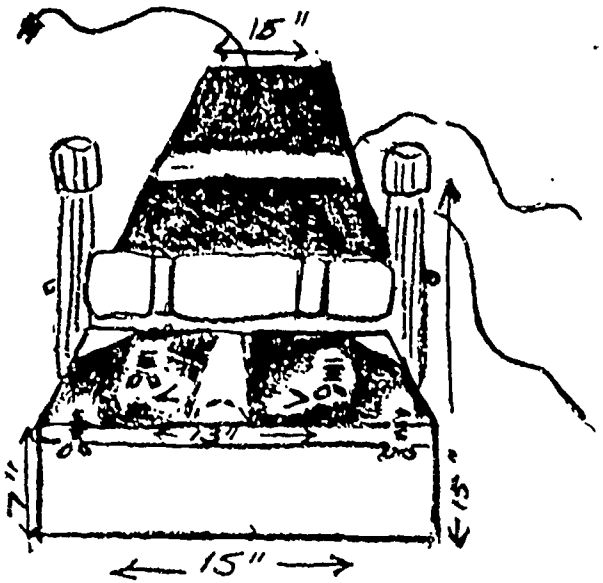
6

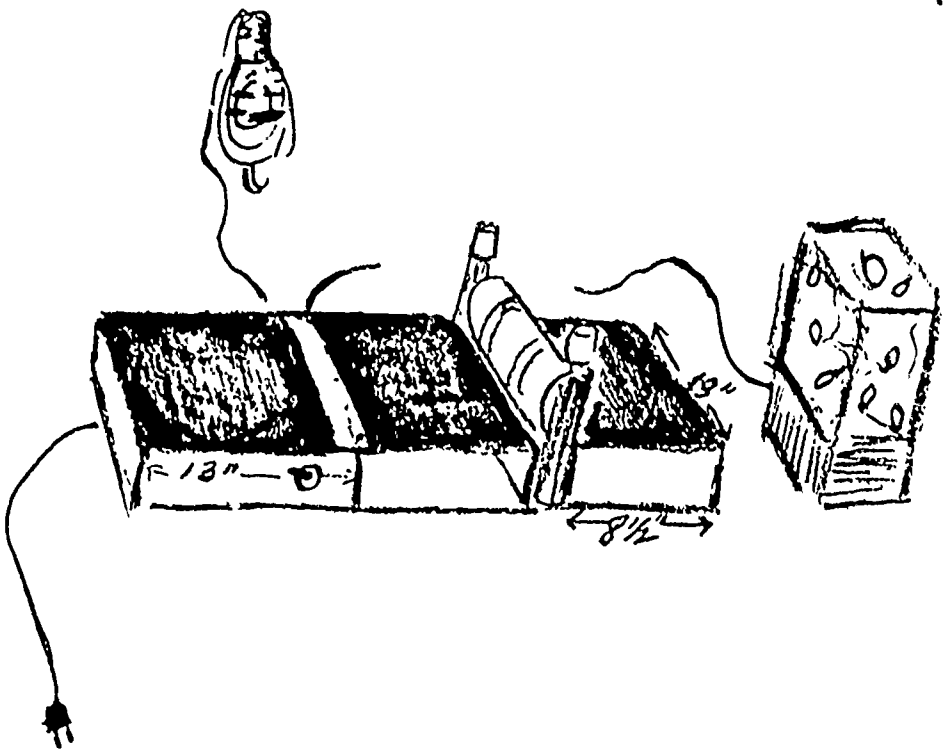
| MATERIALS | PREPARATORY PROCEDURES | EXPECTED RESPONSE | CONSEQUATION | SCORING |
|---|---|---|---|---|
| Learning equipment | (1) Connect contingent visual display | (1) Subject bears weight on extended arms | (1) Contingent light display | (1) Record duration of response |
| | (2) Position subject | (2) Subject either does not respond or responds incorrectly within 1 minute | (2) Repeat 3 second shoulder prompt | |
| POSITION OF CHILD | | | | |
| Prone<br>Chest supported by roll<br>Seat belt fastened around waist | (3) Administer initial 3 second shoulder prompt | (3) Subject either does not respond or responds incorrectly | (3) None | |

Diagrams of Learning Equipment:

Weight Bearing
Weight Bearing Wiring
Bilateral Reach/Grasp
Bilateral Reach/Grasp Wiring



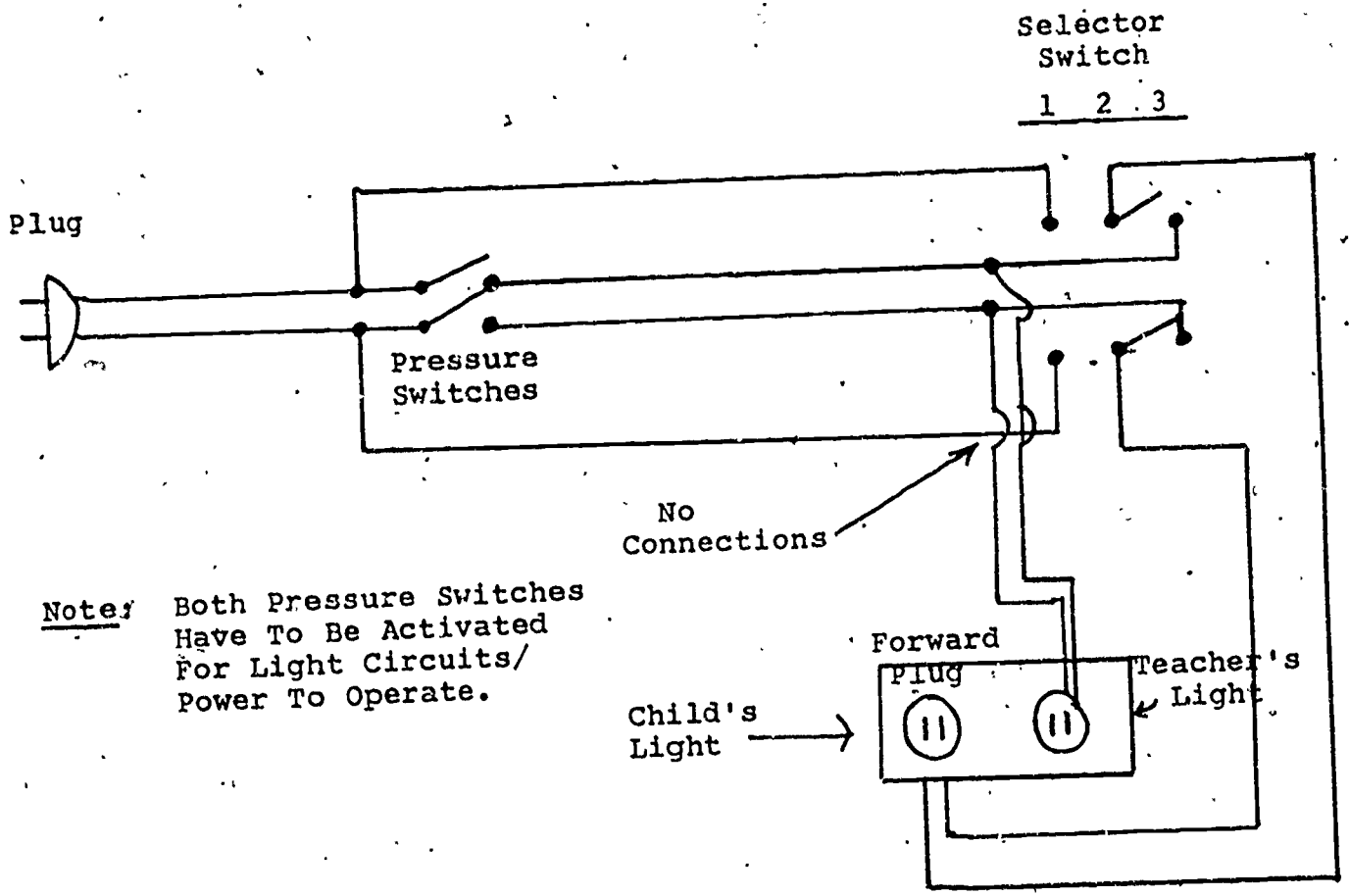




WEIGHT BEARING EQUIPMENT

DESIGNED BY:
Margaret Veltman
Gerald M. Simmons

ADAPTATIONS:
Kelly Edmundson




(forward) 1. Child's light on continuously

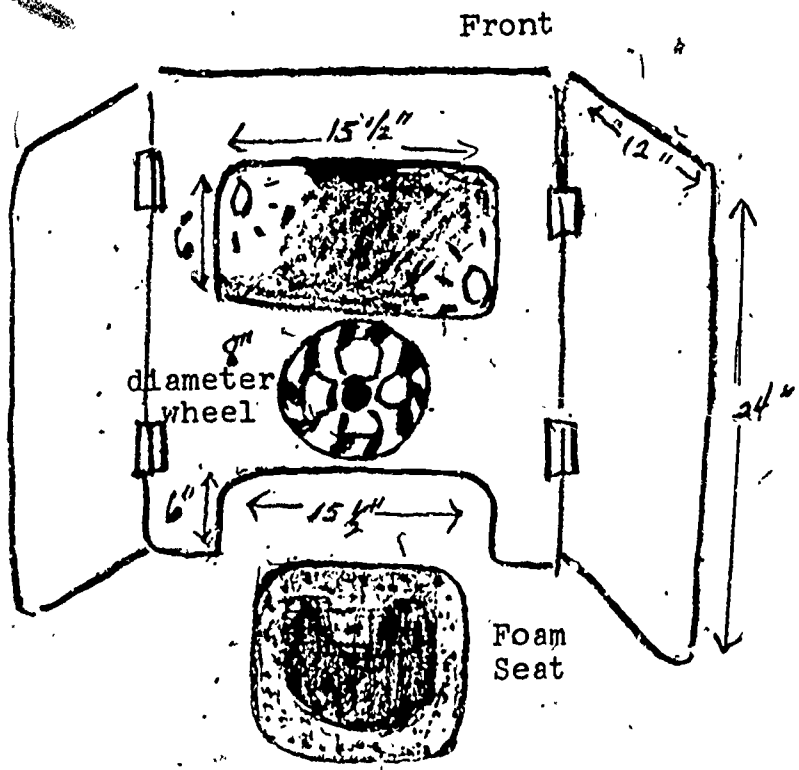
(center) 2. Child's light off

(rearward) 3. Child's light on with pressure switch activated

Note: Both Pressure Switches Have To Be Activated For Light Circuits/ Power To Operate.

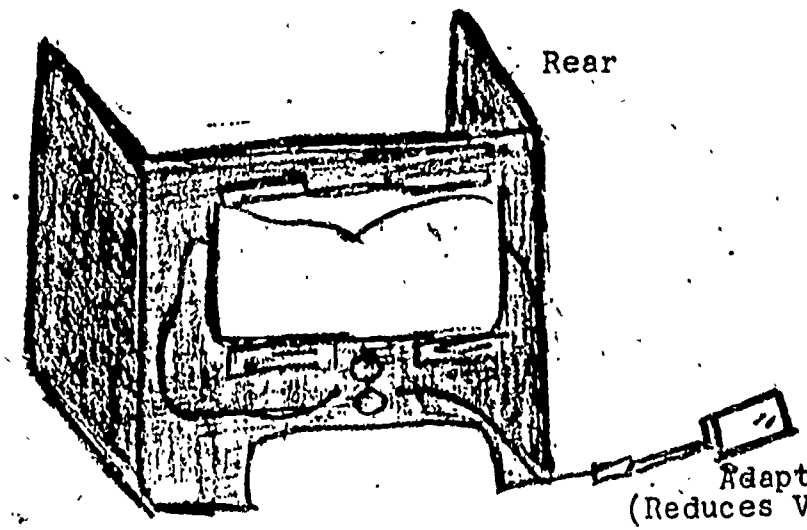
Note: Teacher's light will always light whenever pressure switches are activated

WEIGHT BEARING WIRING




BILATERAL REACH/GRASP EQUIPMENT

BUILT BY:
Margaret Veltman
Gerald M, Simmons



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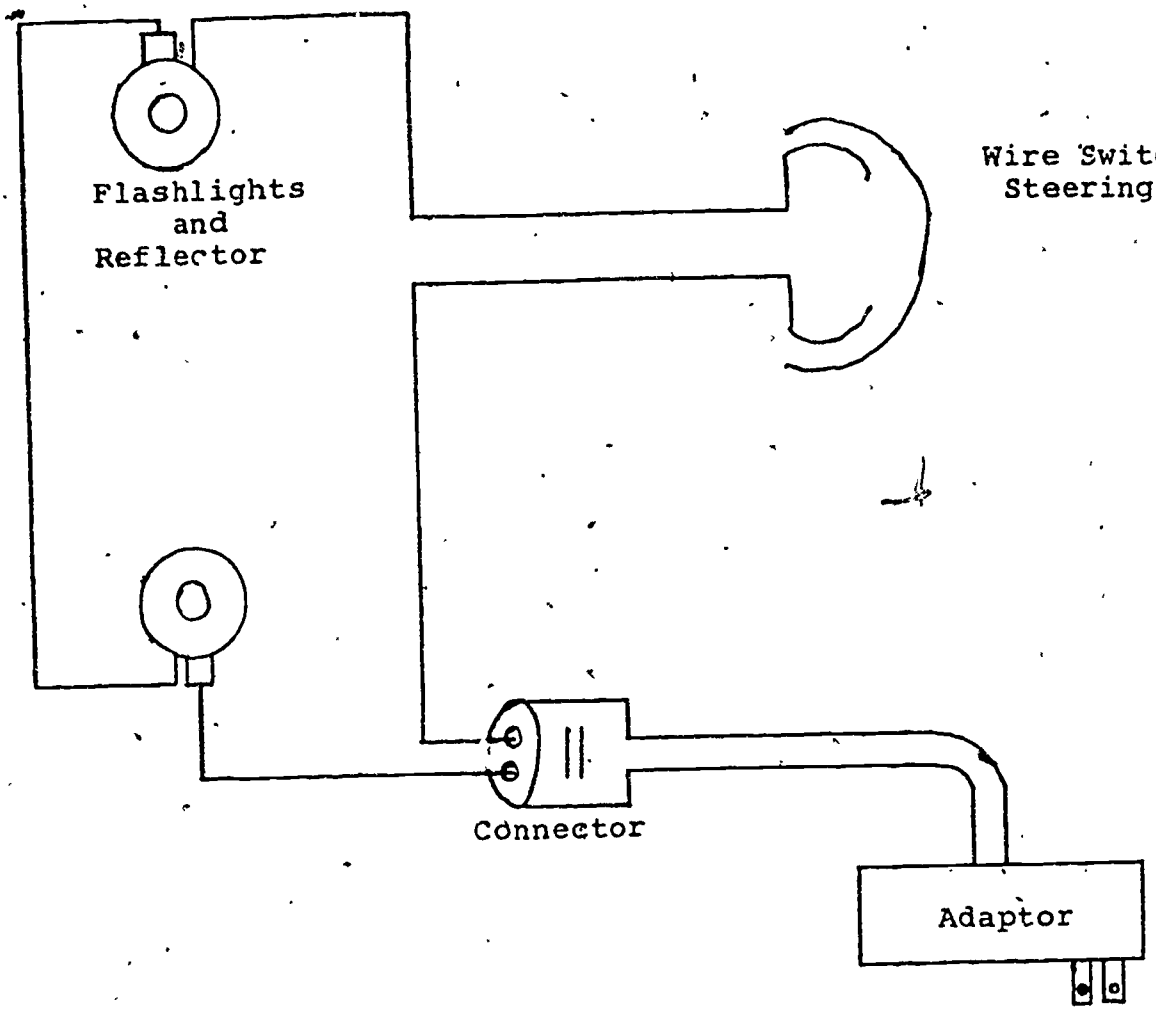


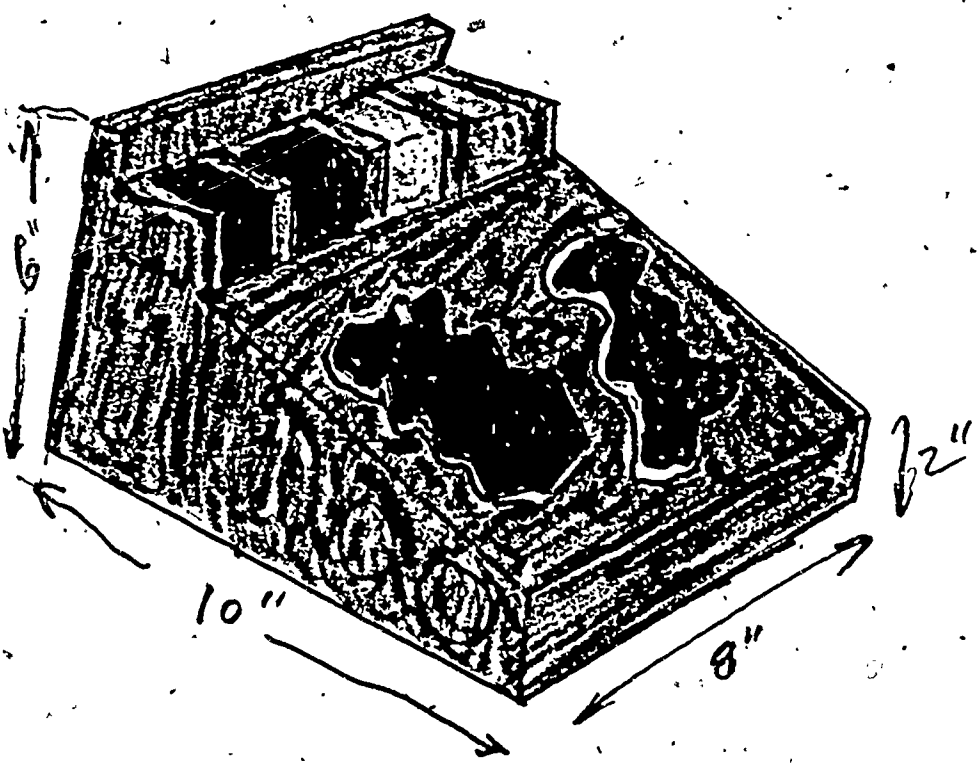

BILATERAL REACH/GRASP WIRING

# Appendix F

## Electronic Apparatus

PUZZLE TOY

DESCRIPTION




This puzzle is designed to reward the child with a seven second burst of lights and sound when he places the two pieces in correctly. After the seven second reinforcement, the child must remove both pieces and reinstall them before the lights and bell will sound again.

The pieces will be colored acrylic plastic about 3"X6" in size. One will have angular edges, the other will have rounded edges. Both pieces will be a $\frac{1}{4}$" higher than the holes.

The batteries, bell, and control circuits will be housed in the case as shown above. The case will be made of plywood and should be strong enough to survive normal kicking around.

# PROPOSED PARTS LIST
# FOR PUZZLE TOY

## Electrical

| | |
|---|---|
| 8 "D" cell batteries (alkaline) | $9.96 |
| 2 battery cases (each holds four) | 2.58 |
| sensitive SPDT relay | 1.99 |
| 4200 MFD Capacitor | 3.49 |
| (4) 12 watt intensity Lite bulbs | 7.00 |
| Automotive turn signal flasher | 4.00 |
| 2 Single pole double throw switches (micro) | 2.68 |
| Bell or Buzzer (12 Volt) | 8.00 |

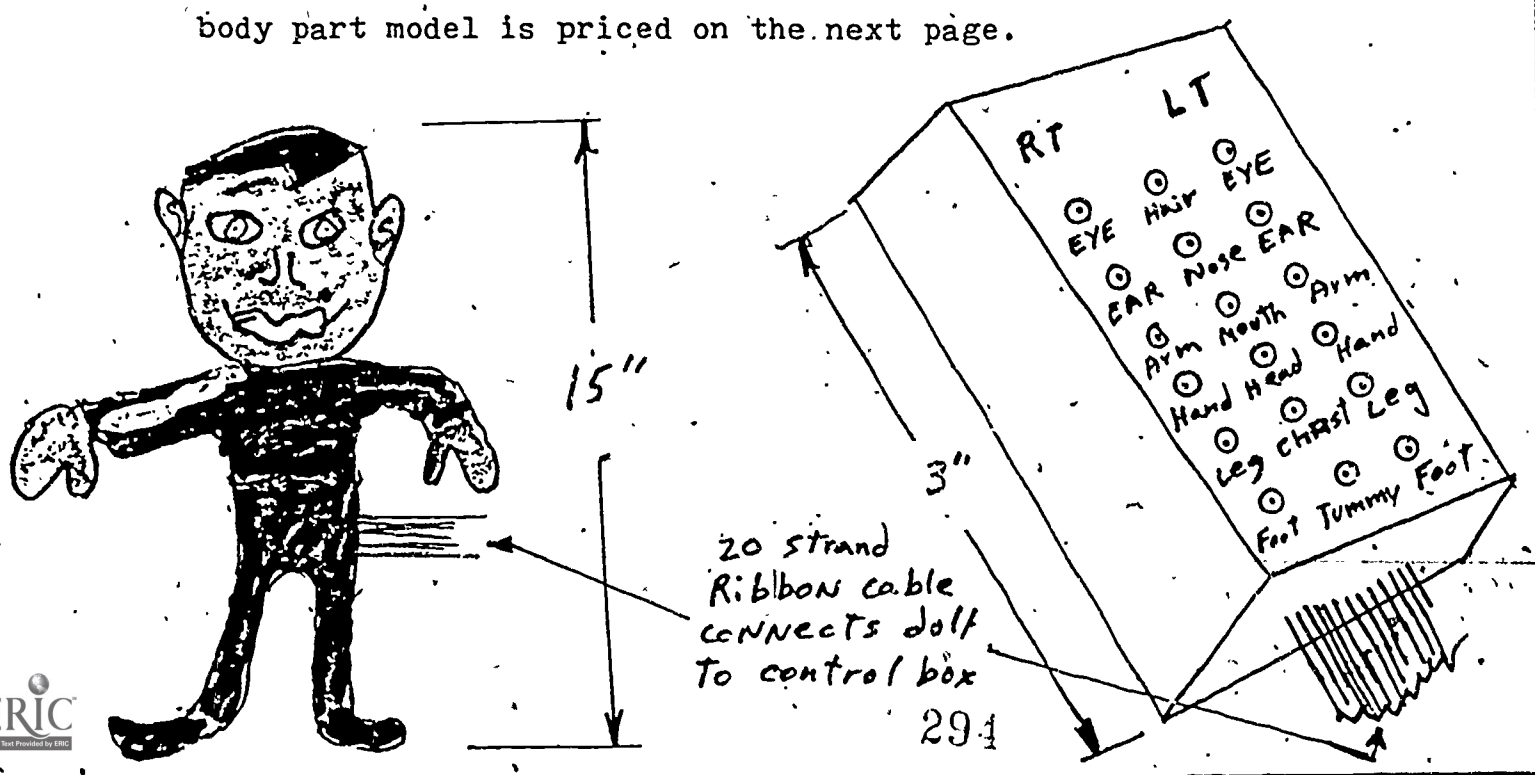
## Case Materials

| | |
|---|---|
| small amounts of colored plastic for lamp lenses and pieces | 5.00 |
| plywood for case | 2.00 |
| miss. screws and other fasteners | 3.00 |
| Paint and Finish | 3.00 |
| TOTAL Material | $52.70 |
| Labor 4 hours at $10.00 | $40.00 |
| Total Estimated Cost: | $92.70 |

BODY PARTS
DOLL TOY

This toy will be used by an instructor to teach a child to recognize parts of the body. In the Simple version, it will consist of a cartoon child made out of translucent colored sheet plastic mounted on a light box. The instructor can control the light with a hand held switch. The child will be asked to point to the cartoon's "hand". If the child points correctly, the instructor will push the button switch and light up the entire doll.

Deluxe version: In this version each part of the doll will have its own light. For example, when the child points to the cartoons head, just the head will light up. This design requires a light bulb for each part of the body and a switch for each light bulb on the instructor's control box. It also requires that the light box have partitions built into it to keep light from spilling over into unwanted areas. A 20 body part model is priced on the next page.



# PROPOSED PARTS LIST FOR BODY PARTS DOLL (SIMPLE VERSION)

| | |
|---|---|
| **Electrical** | |
| 4 "D" cells for power supply | $4.98 |
| 1 battery holder | $1.29 |
| (1) 6 volt light bulb | .79 |
| 1 push button switch | 2.00 |
| 1 hand-held control box | 1.89 |
| **Case material** | |
| 4 to 5 sq ft of colored plastics | $15.00 |
| plywood for case | 3.00 |
| miss screws and fasteners | 3.00 |
| paint and finish | 3.00 |
| TOTAL Material | $34.95 |
| Labor 6 hours at $10.00/hour | 60.00 |
| Total Estimated Cost: | $94.95 |

# PROPOSED PARTS LIST
# FOR BODY PARTS DOLL
# (DELUXE VERSION)

## Electrical

| | |
|---|---|
| 4 "D" cells for power supply | $4.98 |
| 1 Battery holder | 1.29 |
| (1) hand held control box | 1.89 |
| 20 Micro push button switches | 9.96 |
| Ribbon cable 20 strand-48" long | 18.00 |
| (20) 6 volt light bulbs | 7.90 |
| 20 light bulb sockets | 6.00 |

## Case materials

| | |
|---|---|
| 4 to 5 sq ft of colored plastic | $15.00 |
| plywood for case | 3.00 |
| miss. screws and fasteners | 3.00 |
| paint and finish | 3.00 |
| Total Material | $74.02 |

Labor 10 hours at $10.00/hour $100.00

Total Estimated COST: $174.00

Marcie Hansen

SEND CHECK, MONEY ORDER, OR PURCHASE ORDER TO:

Linda J. Burkhart
8315 Potomac Ave.
College Park, MD 20740

PLEASE PRINT

NAME

STREET

CITY STATE ZIP

| ITEM | QTY | PRICE | TOTAL |
|---|---|---|---|
| PRESSURE SWITCH | | $24.50 | |
| HEAD CONTROL SWITCH | | 16.95 | |
| TOY ADAPTER D CELL | | 6.95 | |
| C CELL | | 6.95 | |
| AA CELL | | 6.95 | |
| 9 VOLT | | | |
| ANY 4 ADAPTERS | | 24.95 | |
| BOOK | | 6.00 | |
| MD residents add 5% sales tax | | | |
| | | TOTAL | |

TOY ADAPTER - This toy adapter will fit either of the switches described as well as the ones that you make yourself from the book described below. Simply slide the adapter between the batteries of the toy and plug the switch into it. The toy adapter may be reused for any toy the same size batteries. Select toys that have an ON/OFF switch. Complete directions are included. Please specify battery size. When selecting a remote controlled toy, make sure th there is an ON/OFF switch on the control and buy the adapter to fit the size batteries in the control. The switch will not be able to control other functions besides ON and OFF. Price includes postage and handling. Sizes: D, C, and AA cells.....$6.95

NOTE: The 9 volt adapter requires about one extra half inche of space in the battery compart ment. Examine the toy or radio before purchasing. Prince includes postage and handling. Size: 9 volt.....$7.95

MAKE YOUR OWN! - This book describes how to make simple switches and toy adaptations easily a inexpensively. It gives complete instructions and clear illustrations as well as suggested u and activities. Price includes postage and handling. Homemade Battery Powered Toys and Educational Devices for Severely Handicapped Children, by Linda J. Burkbart.....$6.00

OSSB LOW VISION EVALUATION TOOL

The following is a tool devised by three vision specialists from the Oregon State Schoolfor t Blind: Beppie Hello, Patty Troisi, and Debbie Oppel. It was devised in a joint effort to facilitate a consistent, ongoing method of evaluating both students at the School for the Bl and preschool children in the home. The information is recorded in a developmental sequence. The information placed on this evaluation can then be shared with other educational professior and opthalmologists/optometrists in efforts to provide a total-child education.

This tool can also be used as a criterion reference test in that a vision stimulation progra be devised for children in the areas they are lacking or showing low level of performance.

This tool has already been implemented at OSSB and has proven to be successful in giving an organized profile of each student's visual functioning. We hope it will be useful to you.

Appendix G

San Francisco Infant Program

Student Training Manual

TRAINEES INFORMATION SHEET

To assist trainees of various disciplines in joining the staff of the San Francisco Infant Program, some basic information is necessary. Please fill out the enclosed form and give it to the cooperating teacher/therapist you are assigned to work with.

NAME:

PRESENT ADDRESS: PRESENT PHONE:

PERMANENT ADDRESS: PHONE:

DISCIPLINE: (Teaching, PT, etc.):

College/University currently attending:

Student Program level (e.g. graduate, intern, affiliate, undergraduate, etc.):

Dates of Student Placement: To _____

Days/Hours to be spent in School:

Previous Training Placement (with short description of population and nature of your involvement:

Are there University evaluation forms to be filled out on you? ___ Yes ___ No

If so, who is responsible for this?

Who is your student teaching supervisor?

What competencies do you hope to gain from this experience?

List your strengths and weakness as you see them.

In case of emergencies, who should we contact?

## The San Francisco Infant Program

The primary goal of the San Francisco Infant Program is to provide early intervention services to young handicapped and developmentally delayed infants and toddlers and their families. The philosophy of the program is based on a behavioral approach to education, as well as a developmental approach.

The San Francisco Infant Program is designed to provide field experience and training for students from the disciplines of early childhood and special education, occupational and physical therapy, psychology and social work Students will be given the opportunity to work with a transdisciplinary team, participating and observing various disciplines working together and sharing expertise in providing services to individual children. In addition, various research projects will be carried out in the classroom. Staff members and students will have the opportunity to be involved in these research projects.

## Introduction to the San Francisco Infant Program

The San Francisco Infant Program is a service to infants and their families provided in the school district. It is operated from a federal grant awarded to San Francisco State University. The program is located at Sunshine School and serves infants from birth to 18 months and toddlers 18-36 months. The program provides educational services for each child in all areas of development, including fine and gross motor skills, cognitive and pre-academic skills, communication and social and self-help skills.

Ten infants and their parents or caregivers come to the classroom one day a week for three hours. Parents and teachers plan educational programs for each child during classroom time. Parents also work on the programs and activities at home.

Twelve toddlers, two of whom are non-handicapped peer models, attend school three mornings a week for three hours each session. Parents/caregivers are asked to participate in the program two out of the three mornings. They also provide home programs and activiteis to their child.

In addition to attending class with their child, parents have the opportunity to participate in a parent group bi-weekly. Home visits to each family are also done on a regular basis.

## San Francisco Infant Program Staff Members:

Marci Hanson - Project Director
Pat Landman - Parent Coordinator
Joan LaPoint - Educational Coordinator
Eve Cheung - Head Teacher
Karin Simpson-Schubert - Physical Therapist
Humberto Sale - Spanish Interpretor

## PROGRAM SCHEDULE

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|---|
| AM | Toddler 9:00 - 12:00 | Infant Group B 9:00 - 12:00 | Toddler 9:00 - 12:00 | Toddler 9:00 - 12:00 | Planning & Report Writing; Inservices; Individual Evaluations |
| PM | Home Visits Individual Therapy | Staff Meeting (1:00-4:00) Staffing Inservice | Infant Group A 12:30 - 3:30 | Home Visits Individual Therapy | ↓ |

### Toddler Class Schedule

| | |
|---|---|
| 9:00 - 9:10 | Arrival; Undressing |
| 9:10 - 9:30 | Opening |
| 9:30 - 9:45 | Small Group |
| 9:45 - 10:05 | Small Group |
| 10:05 - 10:25 | Gross Motor/Large Group Activity |
| 10:25 - 10:50 | Snacks |
| 10:50 - 11:10 | Small Group |
| 11:10 - 11:25 | Small Group |
| 11:25 - 11:40 | Large Group Activity/Free Play |
| 11:40 - 11:50 | Closing; Dressing |

Responsibilities of Student Teacher

1. Assist in organization of classroom
2. Assist in planning and implementing small and large group activities.
3. Assist in planning and implementing individual student programs.
4. Assist in data collection in classroom and graphing of data.
5. Preparation of classroom for next day:
   a) Clipboard system
   b) Physical set-up
   c) Teaching materials needed
6. Participate in transdisciplinary team, eg. follow-through on positioning and handling recommendations made by Physical Therapist.
7. Assist in parent training.
8. Participate in home visits, IEP meetings, Evaluation sessions, staffings, inservices.
9. Attend and participate in staff meetings.
10. Develop teaching materials for the classroom.

General Objectives of Student Teaching Practicum

Through the student teaching experience, students will demonstrate knowledge of:

A. Classroom management and classroom engineering skills for an early childhood class

1) behavior management skills
2) classroom arrangement
3) appropriate placement of children in a group activity
4) management of children in a small or large group
5) grouping children according to functional levels; behavioral levels.

B. Development of instructional obejctives and curriculum in selected areas of early childhood education

1) assessment procedures
2) data systems
3) appropriate materials
4) appropriate teaching procedures

C. Basic teaching and presentation skills appropriate for an early childhood classroom

1) Classroom dynamics/presentation skills.
   For example:
   a) facial and physical gestures
   b) vocal presentation during various activities
   c) motivating a group for activity
2) Teaching procedures.
   For example:
   a) task preparation and arrangement
   b) prompting (verbal and physical) and modeling
   c) giving concise directions, and other cues
   d) evaluation of activity while teaching as well as after activity is done.

e) preparation and implementation of small and large group activities

f) reinforcement techniques

g) other relevant teaching techniques.

D. Participation in a transdisciplinary team.

E. Interactions with parents

For example:

1) on home visits

2) setting up instructional programs

3) giving suggestions

4) in parent group meetings

Weekly Practicum Outline

The Objective of the Practicum is for the student to gradually assume more responsibility until s/he is planning for and teaching the entire class or a portion of the entire class for a half-day period. Supervision during the practicum is provided by both the cooperating teacher and the Project Director (who will be the major evaluator). Conferences with the Project Director, cooperating teacher, and student will be scheduled on a weekly basis or as needed during the semester.

I. Week One

A. Observation of Classroom

1. Determine physical layout of classroom (zones, exits, etc.), school facilities, school personnel
2. Inspect and familiarize oneself with:
   a. instructional materials
   b. curriculum guides
   c. operating instructions for equipment
3. Emergency procedures

B. Observation of class and individual student behavior

1. Observe classroom schedule and routine
2. Learn children's names, grouping for instruction
3. Familiarize oneself with:
   a. each child's medical background
   b. current individualized programming
   c. past reports and evaluations (IEP, updated reports)
4. Familiarize oneself with clipboard and ring folder system used in classroom.
5. Observe student, parent and teacher behavior in structured classroom setting.
6. Observe children's behavior during free-time.

II. Week Two

A. Hands-on work with children.
   1. Observe and assess skill level of one infant and two toddlers in a given area.
   2. Determine instructional approach (without teacher's guidance).
   3. Determine possible reinforcers, use of antecedent events.
   4. Determine method of instructional evaluation.
   5. Implement program with two students (toddlers).

B. Spend one morning with Physical Therapist

C. Classroom Management
   1. Review positioning and handling recommendations for one infant and two toddlers with Physical Therapist
   2. Review classroom management techniques observed and discuss with cooperating teacher (for all children in classroom).
   3. Familiarize oneself with:
      a) programs being run in classroom
      b) data systems being used in classroom
      c) home programs
   4. Review clip board and ring folder system.
   5. Assistance in free play time with individual children and in small group activities.
   6. Preparation of teaching materials.

III. Week Three

A. Continue to familiarize oneself with classroom schedule and activities.

B. Classroom Management
   1. Implement at least three programs with small group (teacher prepared).
   2. Review positioning and handling recommendations for all children.
   3. Assist in implementing teacher prepared large group activity.
   4. Continue other classroom management activities begun in previous week.

C. Meet with cooperating teacher for informal evaluation.

IV. Week Four and Five

A. Continue implementation of supervising teacher's prepared small group activities.
B. Begin planning (with supervising teacher) an activity incorporating goals in one or two skill areas, for small group.
C. Familiarize self with snack time operation.
D. Assist in large or small group Gross Motor Activity (planned by teacher or Physical Therapist).

V. Week Six

A. Supervise snack time operation.
B. Discuss small group instruction planned independently with supervising teacher and implement.
C. Plan and implement a large or small group Gross Motor Activity (with input from Teacher or Physical Therapist).
D. Continue implementation of small groups prepared by supervisory teacher.
E. Attendance at home visit.
F. Plan and implement a group activity for the Infant classes (with input from teacher).

VI. Week Seven and Eight

A. Plan and implement a large group activity (with input from supervising teacher and Physical Therapist).
B. Plan and implement a Fine Motor activity and a Communication activity (with input from supervising teacher and Physical Therapist).
C. Continue implementation of small group activities prepared by supervising teacher.
D. Mid-Term Evaluation.

VII. Week Nine and Ten

A. Plan one morning with entire toddler class independently, utilizing other staff members and teacher as observer.
B. Continue planning selected small group activities.
C. Attendance at a Parent Meeting.

VIII. Week Eleven

A. Plan all mornings for entire toddler class.
   1. Teacher as observer
B. Continue planning selected small group activities.
C. Plan for both Infant classes.

IX. Week Twelve and Thirteen

A. Plan all mornings for entire toddler class.
   1. Plan one morning utilizing teacher and other staff members.
   2. Plan two mornings with teacher out of classroom, making only spot observations.
B. Plan for both Infant classes.
C. Assess student teaching experience.

| FACTOR RATED | RATING ASSIGNED | | | | |
|---|---|---|---|---|---|
| 5. Sets reasonable behavioral objectives | 1 | 2 | 3 | 4 | 5 |
| 6. Programming for individual academic behaviors | 1 | 2 | 3 | 4 | 5 |
| 7. Programming for individual social behaviors | 1 | 2 | 3 | 4 | 5 |
| 8. Programming for group academic behaviors | 1 | 2 | 3 | 4 | 5 |
| 9. Programming for group social behaviors | 1 | 2 | 3 | 4 | 5 |
| 10. Uses programs that are appropriate | 1 | 2 | 3 | 4 | 5 |
| 11. Uses programs that are efficient | 1 | 2 | 3 | 4 | 5 |
| 12. Ability to carry out designed programs | 1 | 2 | 3 | 4 | 5 |
| 13. Evaluation of programs | 1 | 2 | 3 | 4 | 5 |
| 14. Planning for aides and/or para-professionals | 1 | 2 | 3 | 4 | 5 |
| 15. Vocal presentation appropriate | 1 | 2 | 3 | 4 | 5 |
| 16. Reinforces appropriately | 1 | 2 | 3 | 4 | 5 |
| 17. Uses effective reinforcers | 1 | 2 | 3 | 4 | 5 |
| 18. Is reinforced by students' performances | 1 | 2 | 3 | 4 | 5 |
| 19. General knowledge of academic materials | 1 | 2 | 3 | 4 | 5 |
| 20. Selection of academic materials | 1 | 2 | 3 | 4 | 5 |
| 21. Utilization of materials | 1 | 2 | 3 | 4 | 5 |
| 22. Utilization of time | 1 | 2 | 3 | 4 | 5 |
| 23. Ability to administer classroom tests | 1 | 2 | 3 | 4 | 5 |
| 24. Classroom control | 1 | 2 | 3 | 4 | 5 |
| 25. Classroom enginnering (seating arrangements, etc.) | 1 | 2 | 3 | 4 | 5 |
| 26. Follow-through on established programs | 1 | 2 | 3 | 4 | 5 |
| 27. Consistency | 1 | 2 | 3 | 4 | 5 |

C. ADDITIONAL COMMENTS

# EVALUATION*

Student Teacher _____

Cooperating Teacher _____

Date _____

Rate by circling the appropriate number:

(1) Excellent (2) Good (3) Satisfactory (4) Fair (5) Needs Help

| FACTOR RATED | RATING ASSIGNED |
|---|---|
| **A. GENERAL ATTITUDE** | |
| 1. "Enthusiasm" for teaching | 1 2 3 4 5 |
| 2. Ability for self-evaluation | 1 2 3 4 5 |
| 3. Accepts responsibility | 1 2 3 4 5 |
| 4. Adjusts to new situations | 1 2 3 4 5 |
| 5. Exhibits initiative | 1 2 3 4 5 |
| 6. Reaction to criticism | 1 2 3 4 5 |
| 7. Asks relevant questions about students and their behaviors | 1 2 3 4 5 |
| 8. Asks relevant questions about techniques and methodology used in class | 1 2 3 4 5 |
| 9. Consistent daily preparation | 1 2 3 4 5 |
| 10. Performance under stress (crisis situations) | 1 2 3 4 5 |
| 11. Interaction with colleagues in non-instructional setting | 1 2 3 4 5 |
| 12. Interaction with colleagues professionally | 1 2 3 4 5 |
| 13. Interaction with parents | 1 2 3 4 5 |
| 14. Interaction with students in free (unstructured) time | 1 2 3 4 5 |
| **B. CLASSROOM PERFORMANCE** | |
| 1. Uses varied, stimulating learning situations | 1 2 3 4 5 |
| 2. Gives clear, concise directions | 1 2 3 4 5 |
| 3. Identification of behaviors for modification | 1 2 3 4 5 |
| 4. Collection of data | 1 2 3 4 5 |

* adapted from "Madison Metropolitan School Districts Early Childhood Student Training Program".

Appendix H

HANSON, M.J. A model for early intervention with culturally idverse single and multiparent families. TECSE, 1981, 1(3), 37-44

# A model for early intervention with culturally diverse single and multiparent families

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Maria, a 14-month-old infant, was referred to an early intervention program at 7 months of age because she was exhibiting muscle stiffness and developmental delay probably linked to birth complications. At the urging of the family pediatrician and because of Maria's extreme irritability, her parents agreed to consider pursuing intervention services. Finding appropriate services was a difficult task, since members of this Latin family speak only Spanish and because both parents are unemployed and with limited financial resources. The parents also have two other young children in the home, one of whom is Maria's twin. A program was located that offered services at no cost to the family in their native language. Though Maria's mother shows a desire to participate in the early intervention program and expresses her thanks for the assistance she receives, she frequently is unable to be involved because of reported restrictions placed on her by her husband. (She also has reported being verbally and physically abused by her husband.) The staff of the early intervention program is working with a number of social service agencies in the city to secure appropriate and comprehensive services for Maria and her family.

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Shurell is a 2½-year-old toddler in the early intervention program. Her happy disposition and well-developed social skills ensure positive interactions with her peers and teachers. Shurell has been diagnosed as hemiplegic and shows a definite need for therapy and training, particularly in motor and language development. Her father, an unemployed disabled Vietnam veteran, is a single parent. As her primary care giver, he brings her to school three times a week and performs training activities with her at home on a daily basis. Shurell appears to be benefiting from her father's teaching and their involvement in the early education program, as indicated by her developmental gains.

Humberto and Shirley were required by a court order to enroll their son, Frankie, in an intervention program. Frankie is a severely multiply handicapped 2-year-old, whose disabilities are linked to a head injury at 4 months of age due to alleged child abuse. Frankie's health is good, and no other accidents or injuries have occurred. Frankie attends the program with one or both parents. However, participation is somewhat irregular, reportedly owing to family difficulties. The family lives in the home of Humberto's mother, who is Latin and Spanish-speaking. Shirley has become proficient in Spanish, since the language is spoken at home. Humberto and Shirley report marital difficulties, and Shirley periodically leaves the home. Frankie's grandmother assumes major responsibility for basic care-giving tasks (e.g., feeding, bathing). Shirley indicates that she is excluded from care-giving responsibilities; Humberto reports that she is incompetent and unwilling to perform these responsibilities. Given the volatile nature of the family structure, the intervention staff works closely with all family members and with other agencies serving this family to ensure comprehensive and consistent care for Frankie.

Amy's established, middle-class family boasts that all members of the immediate family live close by. Amy was born prematurely 3 years ago at approximately 26-weeks gestational age. Her birth was surrounded by severe complications necessitating hospitalization during the 3 months following her birth. At 13 months she was referred by a pediatrician to an early intervention program with the accompanying diagnosis of diplegia, visual impairments (retrolental fibroplasia), and general developmental delay. Amy's parents have been very active in the infant and toddler program, attending parent meetings and workshops, bringing Amy to the program regularly, and performing learning activities with her on a daily basis at home. Amy's grandmother, uncle, and father are to be applauded for their training efforts when Amy's mother was confined to bed with her second high-risk pregnancy. The hard work of this family is reflected by the gains Amy has made across all areas of development.

(*Note:* The names and identifying family characteristics of the actual families on which these case study examples are based have been changed.)

THESE four families participate in the same intervention program for developmentally delayed infants and toddlers. The brief case studies highlight the tremendous diversity of families served by a typical early intervention program in a large metropolitan area. How does one program accommodate diverse families, each of whom represents a wide range of needs and priorities?

A model for parent involvement that features four components for serving various families is implemented through the San Francisco Infant Program, a federally funded (Office of Special Education, Department of Education) program for handicapped and "at-risk" children from birth to 3 years of age. Families participating in this early intervention program are representative of the diverse population of San Francisco; races and cultures represented include white, black, Asian, and Latin families.

The San Francisco Infant Program combines center- (public school) and home-based service delivery systems in a transdisciplinary model. Parents (or care givers representing the parents) attend the program regularly with their children and also participate in periodic

home visits by project staff. This participation is required for a child's admission to the program for several reasons. First, children attend the program weekly for several short time periods, leaving the majority of the child's time spent in the home or at nonschool activities. Second, to change a child's behavior, training must also occur in the other settings outside the school. Third, training focuses on appropriate positioning and handling of children and consistent responding to the child's actions, necessitating the active involvement of the children s care givers.

Numerous position papers and studies have established the need for active parent participation in early education programs. The rationale for parent involvement provided by these studies centers on the amount of time spent with the child, the need for consistent caring for the child, the quality of parent/child interactions, the reinforcing value of the parent, the cost effectiveness of parent-delivered services, and the success of parents in producing change through their training efforts (Bricker & Bricker, 1976; Lillie & Trohanis, 1976; Vincent & Broome, 1977). Thus parent involvement is viewed as a critical component of the San Francisco Infant Program.

## MODEL DESCRIPTION

The San Francisco Infant Program features several components of parent involvement, including classroom instruction on infant skill training and handling, home-training activities, counseling and support services, and the presentation of new information materials.

### Training in the classroom

The focus of the center-based component of the San Francisco Infant Program is on assisting parents to correctly position and handle their children, teach their children new skills, and effectively interact with their youngsters. This is accomplished through teacher/therapist demonstration of new techniques, systematic feedback to parents on their performance of infant training programs, and consultation with parents on goal setting, child development, behavior management issues, and scheduling.

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Shortly after a child begins the program, staff and parents meet to develop an individualized education program plan for the child. During this meeting staff members present the results of initial child evaluations and classroom observations and together with the parents develop short- and long-term educational objectives. At this meeting parents also develop objectives for their own involvement by indicating their needs on a Parent Involvement Plan (PIP). (For further information on the PIP, see Brackman, Fundakowski, Filler, & Peterson, 1977; Filler & Kasari, 1981.) Parent needs ranging from medical and transportation services to the need for instruction in teaching infants specific skills are identified on the PIP, and a contractual arrangement for meeting those needs is agreed on by staff and parents.

Since all parents desired to learn more about teaching their children, this is the major emphasis in the classroom. Children in the program are divided on the basis of chronological age into two groups: infants and toddlers. Infants attend school for one 3-hour session per week, accompanied by a parent or care giver; toddlers, such as Shurell, attend

school three mornings per week. Parents of toddlers remain for the class program on two of the three mornings and use the third day for respite. During classroom time teachers and therapists meet with parents individually and in small groups to derive new teaching objectives and plans for the children and to review the children's training programs.

The exchange of information between staff members and parents is facilitated by the use of a family notebook in which all plans are detailed. Parents perform training activities at home on a daily basis and collect data using forms provided in the notebook. The data collection system is a simple procedure in which a chart is produced as data are recorded, allowing the parent to determine through visual inspection if the program is producing change. The data system used is the model described by Hanson (1977).

Parents are encouraged to integrate their teaching activities into daily routines, such as diapering and feeding, and implement the programs and activities throughout the day when the child is an alert learner. Shurell's father, for example, regularly brings his daughter to school, where he is assisted in developing specific programs for her. Though he is rather shy and nondemonstrative, Shurell's progress through the training programs indicates the commitment of her father to carrying out and recording the home activities. Not all parents are regularly able to work with their children or collect extensive information as Shurell's father does. Therefore the number and type of training activities as well as recording procedures are individualized according to each family's needs. Multilingual staff provide information to participating parents from the Latin and Asian communities.

Additionally, though one-to-one instruction is utilized when necessary in the toddler program during classroom time, much of the instruction is performed in small groups to better prepare children to benefit from and succeed in integrated preschool and kindergarten settings when they "graduate." Interested parents in the toddler group also receive additional instruction on how to plan and manage small group activities. Parent inservice workshops are held periodically to train parents in the activities at which they wish to become proficient. Activities range from reading stories to children and planning flannel board story presentations to teaching small groups of children to discriminate and label objects. Thus parent participants in the San Francisco Infant Program receive systematic instruction in specific infant skill training for their child and are provided the opportunity to acquire additional skills in classroom teaching and managing small groups of children.

## Assistance in the home

The home component of the San Francisco Infant Program also focuses on active parent involvement. Home visits to program families are periodically made by all staff members; the schedule for these visits is determined on an individual basis depending on family need and desire for home visits. On the average, families are visited once per month.

Given that family members are actively involved in child teaching through the classroom component and that home-teaching programs are developed during that time, the purpose of visits to families at home is to discuss special problems or concerns, review child-training programs, and adapt goals and materials as dictated by family circumstances and home settings. Certain child-training needs are also more easily and appropriately taught in the home using the family's materials and following the schedule.

Working with families in their homes also allows staff members to better understand the family's cultural values and life style so that this information can be used to develop educa-

tional plans for the child. In addition, if the family is not English speaking, conversation between family members and staff members, who may be less fluent in the family's native language or who must rely on a translator, may be held in a less structured environment where more individual time can be taken with the family to fully discuss their concerns and receive feedback from them. For example, Maria's mother is able to more fully participate in the home than the school component of the program given the restrictions placed on her by her husband. Since she speaks Spanish, the home visit provides an opportunity for her to express herself fully at a time when staff members can focus solely on her.

The final and perhaps most important purpose in considering a home-based component to an early intervention program is the involvement of each family member. A home visit is an opportunity for staff members to meet with siblings and a parent or parents who are unable to meet during the classroom day because of their schedule. The home visit program component was of special value to Amy's family, for instance, when all family members had to work together to ensure Amy's continued training at the time when her mother's pregnancy prevented her active involvement. As demonstrated by Amy's family, participation by all family members in employing training strategies and in understanding aspects of the child's development ensures more complete and consistent assistance and response to the child.

### Parent support activities

Many parents are faced with difficulties (e.g., marital problems, serious illness, unemployment), which must be alleviated before they are able to become fully involved with their child's training. Even in families free of such stresses, concerns that dictate a need for support services may arise.

Though not adequately staffed to counsel and assist families in many of these service areas, the San Francisco Infant Program has developed several strategies to accommodate family needs that do not directly involve the child's education. First, one staff member, the parent program coordinator, assumes responsibility for providing direct assistance to parents. This assistance varies from performing an activity with the parents (i.e., filling out an application for services) to giving parents information on available resources such as lists of babysitting referral agencies, national and state agencies serving handicapped children and their families, and local social service agencies (e.g., welfare, mental health).

In addition, parent support groups meet bimonthly for an hour while children are in the classroom. Since children are grouped by chronological age, parents attend support groups with other parents of children of the same age but with different disabilities. The content of the meeting is determined by the parents. Parents of the youngest children have used the groups as a counseling situation, exploring feelings about having a handicapped child and devising strategies for handling relatives' and strangers' responses to and inquiries about the child (e.g., What do you tell a stranger on the bus who asks why your child does not walk?). Parents of the toddlers requested more structured discussions focused on topics such as discipline or behavior management and school placement for children after graduation from the infant/toddler program. Parents' evaluations (anecdotal feedback and responses on a parent satisfaction questionnaire) indicate these groups are beneficial, and high attendance rates even under difficult circumstances suggest they are a meaningful experience.

A third support service component is the structured review of children's programs at periodic meetings of the infant program staff, the parents, and all social service agencies in

the community that are involved with the family. At these meetings, organized by the infant program, staff members present a report on the child's development and progress, and all agencies discuss service provisions for the family. These meetings often represent the first time that various social service agency personnel have met one another and coordinated services. For families such as Frankie's, this coordination becomes critical as a means of ensuring adequate child care and may involve additional meetings or phone calls as necessary to arrange services. Thus the San Francisco Infant Program serves as the broker or coordinator in finding needed services for families and for establishing cooperative ties and plans among agencies providing those services.

### Parent workshops

Having a young child with developmental problems is a new experience for most parents and is fraught with anxieties and questions. Many parents share the same need for more information in specific areas. In order to provide information to all participants in the program and involve all family members who may wish to attend, the San Francisco Infant Program sponsors a series of optional workshops held in the evening. Workshop topics are chosen by families in the program and have included legislation and legal issues related to school services for handicapped children, language development, genetics counseling, behavior management, and common medical emergencies.

As with other program components, staff members furnish multilingual written materials or translations as needed and facilitate participation by organizing services such as transportation. Parent workshops provide a systematic and efficient method for presenting new information, a time for parents to socialize and get acquainted, and also a means of involving family members who are unable to attend daytime activities.

## STAFF RESPONSIBILITIES

The staff of the San Francisco Infant Program include the following members: a half-time project director, a quarter-time parent program coordinator, and a full-time educational coordinator, teacher, and physical therapist. A psychologist, pediatrician, and communication specialist also consult for the project. Staff members are representative of the cultural groups served in the city and most are bilingual, which ensures that culturally diverse populations can be served by the project.

All staff members, regardless of their area of expertise, work directly with parents. The project emphasizes a transdisciplinary approach in that each team member practices "role release" by training others in their specialty area. Parents are active members of this team. Activities are performed by all staff members in the classroom and in the home. The project director manages the system to ensure that the parents' needs are met and all staff members and parents are actively included.

Through the Parent Involvement Plan, the staff members of the San Francisco Infant Program enter into an agreement with the parents to assist them with identified needs. Many components for parent involvement are offered to families. These include training in the home and classroom settings, parent support groups, referral services, workshops, and frequent counseling and discussions with family members. All activities are structured to meet the needs of families from various cultures and family constellations. The Infant Program services are evaluated by analyzing the number of parent objectives met and parent satisfaction with the services provided.

Parents, especially those of very young children, bear responsibility for almost all aspects of the child's life. Long before schools, peers, and other social institutions exert an influence on the developing child, parents must play the major roles needed in raising a child. Though program goals typically focus on assisting parents in these roles, different parents will participate to various degrees, depending on family needs. Such factors as single parenthood, needs of other children in the family, illness, employment, cultural factors, marital difficulties, or financial problems may influence the degree of any parent's involvement at a given point in time.

In addition, programs must be able to accommodate the shifting needs of families, reflected by changes in American life style. For example, recent data compiled by the U.S. Census Bureau showed an increase from 5.6 million to 8.5 million in the number of households headed by single women. This report also indicated that families maintained by women with no husbands fared less well economically than others and had a median income significantly below that of the national average for all families. Thus early intervention program models must present a flexible approach to type and degree of parent involvement.

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Intervention programs, particularly those in metropolitan areas, also must be able to offer services appropriate to a wide variety of cultural/ethnic groups. In San Francisco, for example, categorization of the population by ethnic group and race from current data (1980 U.S. Census Bureau) estimates that 11% of the population is Black, 22% Asian, less than 1% Native American, 46% White, 14% Spanish-American, and 7% other ethnic groups. From a program development perspective, issues in serving a culturally diverse population include providing services to families in their native language, acknowledging family values and priorities dictated by the culture, and incorporating training into the family's defined roles for parents and children (e.g., a matriarchal family structure where the mother assumes all responsibility for child-related activities and the father does not actively participate).

No program can be expected to satisfy all community needs. However, given the established practice that parents can and should be an integral part of an early intervention effort, models specifying levels of parent involvement must present a spectrum of services to meet parents' needs and a flexible approach to the type and degree of parent involvement at any given point in time. The underlying principle dictating services available for parents must be that those services are in the best interest of the child.

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