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ABSTRACT

Presented is a description of the Capper Foundation Early Education Project which serves up to 30 physically handicapped children (0 - 7-years-old) at a given time, and included is an explanation of how objective measurement techniques are used to assess performance in class, physical and occupational therapies, and speech pathology. Outlined are the history of the project, descriptions of staff members, evaluation and treatment methods, measurement techniques, evaluation processes, teaching skills, and the use of the team approach. The infant program and the parent program are described. In the sections on the preschool, physical and occupational therapies, speech pathology, and social services case studies are reviewed as examples of the use of individualized educational programs, and graphs and charts are included. A detailed case study of one child is presented and followed through the evaluation interview, evaluation staffing, and departmental staffing reports including planning, results, and recommendations. Appended are a list of forms and the address of the foundation from which to obtain them, and tables of long-and short-term goals for physical and occupational therapies. (IM)

Begin at the Beginning

A Report on The Capper Foundation's Early Education Project

Edited and photographed by Ron Fugate

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Acknowledgements

Many individuals deserve recognition for making **'Begin at the Beginning'** possible.

Most visible is the early education outreach team which contributed to and collected information for this report.

Team members are Benith MacPherson, project director; Barry Molineux, speech pathologist and assistant project director; Lavonna Creviston and Rita Popp, early education teachers; Melinda Huston, occupational therapist; Deborah Lynn and Susan Keller, physical therapists; and Jimmilee Prouty, early education social worker.

Special thanks goes to Monty Nelson, former project director. Mr. Nelson developed the early education model at The Capper Foundation and supervised the project during its initial two years as a demonstration site.

There were many others involved behind-the-scenes.

—Dr. Doug Guess, consulting behavioral psychologist, who counseled the staff on development of measurement procedures.

—Maria Miller, secretary, who assembled this manual into typewritten form.

—Edward Gibbons, director of rehabilitation services and Frank McGrath, executive secretary, both of whom have actively supported and endorsed the early education program.

And, most importantly, special thanks goes to the children enrolled in the early education project and their families. Without their participation in the program and their support of its goals and objectives, this report would not have been possible.

Ron Fugate

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History of The Capper Foundation's Early Education Project

In 1971, The Capper Foundation received a grant from the Bureau of Education for the Handicapped to establish the Handicapped Children's Early Education Project.

The grant was made possible by the Handicapped Children's Early Education Assistance Act, passed by Congress in 1968.

The act established funds to provide model centers designed to generate and expand services for young handicapped children. One hundred fifty centers are currently being funded. Type of population served and program content vary from center to center.

The Foundation's model center developed a program to objectively measure the performance of multi-handicapped children in therapy and classroom settings. Techniques were established by the early education treatment team with assistance from a consulting behavioral psychologist.

During the first year, in-service staff training sessions were held regularly. The staff learned about behavior management, basic behavioral principles and the use of behavior modification.

Training material was selected from the **R. Vance Hall Series**(1) text and **Elementary Principles of Behavior.**(2)

The project completed its third year of operation as a demonstration site in June, 1974, and is now in its outreach phase. The staff continues to serve handicapped children enrolled in the program, and assists others in Kansas who wish to establish similar programs.

An advisory council, comprised of members from related early education and health fields, assists in planning, developing, operating and evaluating the various program components of the project.

With a broad range of backgrounds, council members make excellent resource people for outreach activities. They also promote the goals and objectives of the early education project within their particular fields of interest and to the community at large.

And, as impartial observers, council members help assign priorities to the project's overall goals and objectives.

Early Education team members consult with Behavioral Psychologist, Doug Guess (left).

(1) H & H Enterprises, Inc., P.O. Box 3342, Lawrence, Kansas 66044.

(2) Donald L. Whaley and Richard W. Mallott, Appleton Century Crofts 1971-New York, New York.

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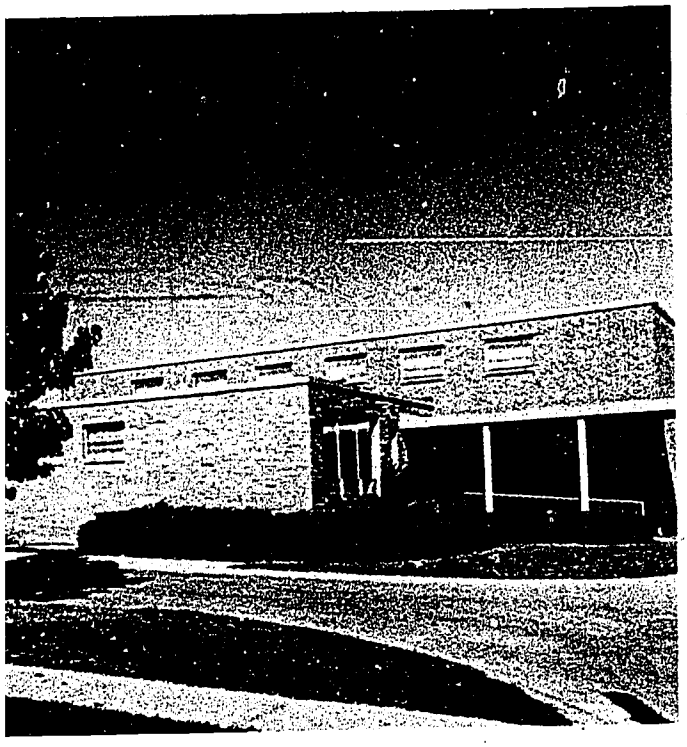

rippled Children is in Topeka, Kansas.
rthur Capper, former Kansas governor and United States

ic groups provided financial assistance to handicapped
and hospitalization.
handicapped continued to grow over the years. And, it
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omprehensive rehabilitation center for the handicapped.
ion is at 3500 West Tenth Street. Constructed in 1959, the
vide a wide range of services.
upational and speech therapies, as well as psychological
tion program from kindergarten through high school.
lation has expanded its facilities to provide additional
vices.
well-equipped vocational training and work activity center
ol age youth and adults. And, an early education program
n years has been established.
es have been built to house children from outside the

education program serves about 30 children at the Foun-
ren reside at the Foundation and 40 others from the com-
c and therapy programs.
en receive therapy on an out-patient basis, while 20 adults
nd vocational training at the work activity center.

Why Early Education?

For years, experts in medicine, education and psychology have told us that a child's greatest growth occurs in the preschool years.

Based on this premise, early education programs have flourished.

Preschool centers of all sorts have sought to cultivate the child's emotional, social and intellectual growth in its prime.

Until recently, handicapped children have been unable to share this opportunity.

For one reason, most preschools are not equipped to handle the handicapped child's special needs. But that is changing. And, so is the attitude that it is useless to try to help handicapped children in their early years.

There is conclusive proof that handicapped children benefit from early intervention.

Members of the early education team have been witness to this fact.

As an example, consider children with speech impairments.

Surveys indicate that as many as 60 to 70 per cent of children with cerebral palsy have speech difficulties ranging from slight distortions to total impairment.

Research conducted by Byrne (1) (1959) illustrates the problem. Byrne evaluated the language development and articulation skills of young spastic and athetoid quadriplegic children. Data indicated that the appearance of first words was 15 months. Two-word sentences appeared at 36 months and three-word sentences at 78 months.

Even though these results show serious delay, Byrne also found that children with cerebral palsy developed in the same sequence as do normal children. This evidence points to the vital need for early intervention.

Kirk (1964)[2] found that the earlier intervention begins, the greater are the gains which occur.

Piaget (1952)[3] described the value of acquiring linguistic expression of sensory motor intelligence during the first 18 months of life. As learning occurs early in the child's life, these findings suggest that early intervention is necessary for the handicapped child in two ways: first, to maximize those conditions which increase vocabulary acquisition; and, secondly, to minimize those conditions which decrease phonatory, articulatory and linguistic proficiency.

Early intervention also requires parental support.

Allen (1972)[4] reports that programs are more successful when parents are involved in the child's treatment.

In fact, the U.S. Office of Education specifies that all model programs for handicapped children utilize parents as one component of the project.

And, most importantly, parents see the need for proper instruction on how to handle their handicapped child.

As one parent put it, "I have three older children. They are all normal. I taught them skills in pretty much the same way, and they all learned at about the same rate.

"Now, I have a child with cerebral palsy. The techniques I used with the other children won't work with this child. I'm having to start all over again."

Not only is it vital that parents participate in their child's development, but also it is imperative that they know **how** to participate. Too often, well-meaning parents can cause further problems by responding to the child improperly.

A pediatric neurologist explains it this way: "A handicapped infant interprets the environment differently and responds differently. The parent, likewise, tends to modify his or her response to the infant. This sets up a cyclical process which is counterproductive to the child's development."

The need for proper early intervention is well supported. The task at hand is to isolate those factors in young handicapped children which are prognostic for improvement with early intervention. The next step is to develop reliable instructional methods and situations which will be most effective in teaching skills to young handicapped children.

This is what **Begin at the Beginning** is all about.

It is designed to familiarize you with a program that is striving to meet the varied needs of young handicapped children and their families.

This manual summarizes more than three years of findings and results compiled by the staff. It describes program basics which we feel will be of benefit to others wishing to establish similar early education programs.

Among the program components highlighted are parent involvement in treatment, use of an interdisciplinary team approach to treatment and early intervention with infants.

Programs are more successful where parents are involved in the child's treatment.

Also included is the use of objective measurement as a means of documenting performance and assessing progress.

Whether you agree or disagree with the approach as outlined in this report is not important. What is important is that you consider what has been done at The Capper Foundation. We urge you to explore our methods, question our findings and test our results. Then decide for yourself on the merits of this program.

We also hope that this report will generate questions and foster new ideas. And, we encourage you to share them with us, for communication is the beginning of understanding.

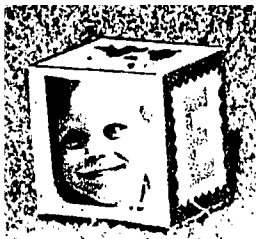
The Early Education Staff

(1) *Byrne, M. Speech and language development of athetoid and spastic children. Journal of Speech and Hearing Disorders. 24, 1959, 231-40.*

(2) *Kirk, S. The challenge of individual differences. In Melvin M. Tumin and Marvin Bressler, (Eds.), Proceedings of a Conference on Quality and Equality in Education. Princeton, N. J.: Princeton University Press, 1964.*

(3) *Piaget, J. The Origins of Intelligence in Children. New York: Norton, 1963.*

(4) *Allen, K. Individualizing instruction for preschool children through utilization of parent-teacher data. In A. H. Hayden (Ed.), Selected Case Studies. Model Preschool Center for Handicapped Children, Experimental Education Unit, Child Development and Mental Retardation Center, University of Washington, Seattle. Washington, 1972.*



Description of Early Education Program

The types and severity of handicaps vary in children who are enrolled in the early education program at The Capper Foundation. All are orthopedically handicapped or developmentally delayed. Cerebral palsy and myelomeningocele are the most common diagnoses. And, many have speech, hearing and visual impairments.

Staff

The Capper Foundation's early education team consists of a project director, social worker, two early education teachers, a teacher assistant and a classroom aide. In addition, there are a speech pathologist, physical therapist, occupational therapist and secretary.

A behavioral psychologist consults with the early education team. Other Capper personnel available to assist children and staff on request are a nurse, psychologist, and medical, legal and social work consultants.

Under supervision of professional staff, therapist's aides and student affiliates handle treatment programs for selected children in the early education program.

Up to 30 children receive services on an individual basis at any given time. However, smaller enrollment is advised during a program's first year to allow time for in-service training of the early education treatment team.

Evaluation

Referrals to the early education program are accepted from a number of sources and are processed by the project social worker. The child's medical information is assembled and reviewed by team members. Then an evaluation is scheduled, which may require two to six weeks. Extended sessions are arranged if a longer adjustment period is required for an accurate assessment of the child's abilities.

Therapists and teachers coordinate the child's treatment program.

During the evaluation, clinical therapists and teachers assess the child's performance in several areas. Included are social and cognitive skills, adaptive behavior, fine and gross motor skills, language acquisition and auditory awareness.

At the same time, the social worker develops an understanding of family dynamics and coping abilities. Evaluation reports are reviewed by the treatment team and a recommendation for services is made.

Acceptance into the program depends on whether the child can benefit from the therapies offered, and whether The Capper Foundation setting is suited to the child's needs.

For example, a child with exceptionally severe emotional or behavioral problems may need psychological treatment that is beyond the scope of The Capper Foundation's early education program. For that reason, he or she would be referred elsewhere.

Treatment

Once the child is accepted into the program, treatment is designed based on results of the initial evaluation. While some classroom and therapy activities are conducted in groups, treatment goals and objectives are tailored for each child.

Therapists and teachers coordinate the child's treatment program. For example, the physical therapist may place the child in a relaxed position during a language stimulation session to facilitate sound production.

Or, classroom teachers may explain to therapists the child's academic goals, such as color recognition, so that emphasis can be put on these concepts during therapy sessions.

Likewise, the speech pathologist may inform the teacher of functional words a child is learning. In turn, the teacher can reinforce the child's word awareness in the classroom. Thus, frequent program planning and evaluation meetings insure continuity from one setting to another.

Rewards

Teachers and therapists use a wide range of theories and treatment techniques. For example, behavior modification is successful when the reward is appropriate for the child. Social and physical praise are used frequently. In addition, the child may be allowed to play with a favorite toy, listen to music or watch slides of familiar people and activities. Sometimes tokens are awarded which can be exchanged for a star to be added to a seasonal picture.

As members of the treatment team, parents are encouraged to participate

in various phases of their child's treatment. This enables the clinician to suggest treatment in the home setting. It also provides an opportunity for parents to participate in program planning decisions.

Early education team members believe the interdisciplinary approach to treatment and education enhances the teachers', parents' and therapists' understanding of the total child and facilitates individualized program planning.

Measurement

One of the most successful and important aspects of the early education project is the development and use of an objective system of measuring children's behavior and performance.

This system helps both teachers and therapists plan a child's program. It also enables them to determine whether the program is effective. Besides providing conclusive proof of the child's improvement or regression, objective measurement has several other advantages, as we shall see.

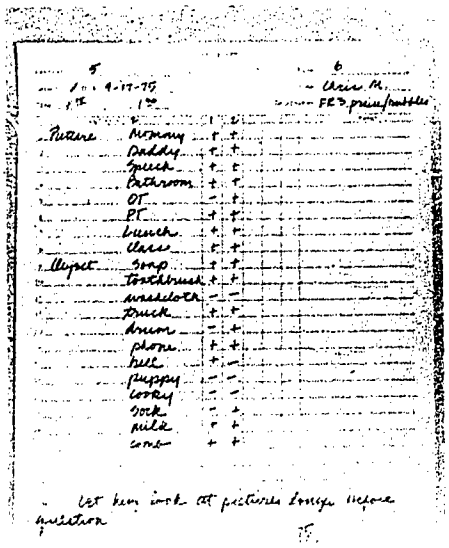
With some exceptions, objective measurement of progress often is ignored. For example, consider teaching methods used by physical and occupational therapists. Traditionally, these therapists have relied on subjective notes rather than objective measurements to record progress in most activities. And, accordingly, they have set goals in terms of whole tasks rather than in terms of measurable separate steps leading to completion of tasks. For instance, with subjective measurement a therapist might note, "Jimmy's ability to sit tailor style has improved." With objective measurement, the note might state, "Over a period of three months, Jimmy's ability to independently maintain a tailor-style sitting position has increased from two to 15 seconds."

Objective measurement records better enable therapists to detect subtle changes in performance, which may reflect significant progress for severely handicapped children.

Objective measurement also plays a key role in the classroom settings. Take, for example, the nonverbal cerebral palsied child. The task of assessing attending behavior may not be effectively achieved through casual observation alone.

But through objective measurement, the frequency of the child's eye contact with the teacher can be recorded over a period of time, which enables attending behavior to be better assessed.

The information gathered through objective measurement can be shared with teachers and staff who may plan to work with the child in other treatment settings. And data also can be used to help establish long range program goals.



Working alone or with other team members, teachers and therapists use objective measurement procedures to document change in the child's development.

In addition, there are other direct benefits of the objective measurement system. When tasks are broken into small increments and measured, the child is able to experience success through a series of step-by-step accomplishments. Accordingly, treatment goals and objectives appear more manageable to both the child and the therapist.

Documenting Changes

Also, by documenting changes through objective measurement, professionals become accountable to those whom they serve. This is sometimes known as the principle of accountability.[1] Basically, what it means is that the consumer holds those who provide the professional service accountable, responsible and liable for the manner in which they deal with the client. This is based on standards established by the courts, as well as by professionals working with the handicapped.

Generally, these standards provide those involved in treatment services a guide for measuring the program's effectiveness. An effective program reflects thorough planning, consistent monitoring and periodic evaluation of treatment techniques.

In contrast to traditional approaches, objective measurement enables educators and therapists to learn specifically which procedures are effective and useful, and which are not. This provides a more responsible approach to treatment.

Accountability

Emphasis on accountability is bound to grow in the future. As the knowledge of physical disabilities and their treatment increases, professionals will need to deal with their clients in new ways. And, of course, the public will demand this as its awareness of the needs of the handicapped grows.

Videotape documents change in the child ...

At The Capper Foundation, accountability requires that staff document evidence that program goals and objectives are being met. Professionals are responsible to their clients, to parents of the handicapped and to their employer. They also have a responsibility to fellow professionals who use the interdisciplinary approach in treatment, to legislators who advocate governmental support of the treatment program and to taxpayers and contributors who fund the program.

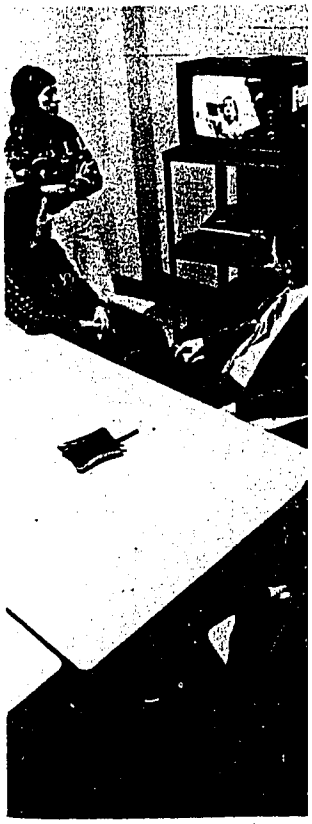
Use of Videotape

Videotaping is an invaluable asset to The Capper Foundation's early education project. Generally, it is used to evaluate the handicapped child's progress, to help teachers and therapists critique their teaching methods, and to demonstrate skills to professionals in other settings.

Evaluating Progress

Soon after a child enters the early education program, 15- to 20-minute videotape segments are made of his or her performance in therapy and classroom activities. Additional tapes are taken at six-month intervals.

Twice a year, parents are invited to join the treatment team to view tapes. This enables parents to ask questions, and also allows the team



...and helps parents see progres

to give reports of progres and to suggest supplem activities aimed at atta ment goals.

These sessions not or changes in the child's p also they often provide more candid view of thei formance. In other w "live" parent observation paired by classroom distr child's mood, and the dis viewing room from the therapist.

In addition, a therapist to pinpoint the child's show parents how the plement the activity in th ting.

(1)Exceptional Children, Marc countability: An overview of Litigation on Professionals," p. 4

Or, the therapist may wish to isolate a particular behavior problem or difficulty in attaining a skill, which may not be apparent otherwise.

In other instances, videotapes are used to introduce the child to a new therapist, teacher or workers in other settings. Tapes frequently provide student affiliates a better description of the child's disability than do written notes. And, tapes of the child's performance on treatment tasks help doctors compare past performance with current levels of functioning.

Evaluating Teaching Methods

The staff uses videotapes to see how it handles treatment programs and conducts classroom sessions. Likewise, social workers may choose to videotape parent group discussions to help them remain responsive to group dynamics.

Group members also might benefit from seeing tapes of earlier sessions and sharing their impressions of the interaction that took place.

Teaching Tools

Videotapes can be a valuable teaching tool utilized by therapists and teachers in presentations to professional and civic organizations.

But, like anything else, planning is important to create a useful video program. Consideration should be given to the goals and objectives of the program, audience, length of program, subjects and scenes to be portrayed.

Videotape equipment is not essential for a preschool serving handicapped children. However, it is a valuable tool for providing a visible, animated record of individual growth and progress for both the handicapped child and the staff.

Team Approach

A major emphasis of the early education project is the use of the team approach.

In order to plan an effective program in a multi-disciplinary setting, each treatment team member must keep others aware of his or her specific training objectives with the child. This is done at staff meetings twice a week. There, program planning is discussed, and techniques are designed and demonstrated which maximize the effectiveness of the child's total treatment program.

Information about matters such as the medical status of an absent child, parent contact with the staff or field trips and behavior management programs also are discussed. More informal discussion about program planning efforts may take place during the week.

Staffings

Semi-annually, the staff meets to formally evaluate and assess the child's individual treatment program. Each department reports on the child's present level of functioning and current treatment goals and objectives. The staff also reviews the child's progress since the last staff meeting.

Exemplary charts and graphs, which demonstrate the child's performance, as well as samples of pencil skills, art work and self-portraits, are presented and discussed. In addition, the staff reviews parental concerns raised during the pre-staffing interview with the social worker. Also discussed are behavior management problems, health problems and any other matters affecting the child's performance and participation in the program.

Future treatment goals and objectives, along with plans for handling existing problems, are recommended. The social worker concludes the meeting with a review of major areas of emphasis, and of any changes indicated in program planning.

Team members submit written reports to the social worker after the meeting. This information is assembled, along with matters discussed at the meeting, and is entered into the child's medical file. Copies also are distributed to the staff. (Examples of staffing reports appear on Pages 55 and 60.)

By understanding the total treatment program and striving to attain the goals and objectives of each component, the team can achieve consistency in program planning as well as evaluation and treatment.

Realistic goals and objectives greatly enhance the child's learning experience.

Team approach helps each discipline plan a more effective program.

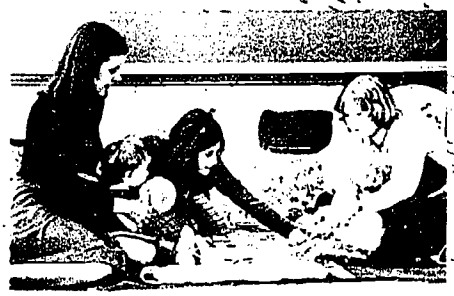
10

Infant Program

The Capper Foundation's Infant Program is an extension of the early education project. It developed as both staff and parents began to recognize the need to provide services to handicapped infants and toddlers.

In the past, parents had to wait until their child was two years old to enroll him or her in class and therapies at Capper. This was frustrating and discouraging. Parents wanted earlier access to therapies and training in cognitive, personal and social skills for their children. And, they wanted guidance and support from the project staff as well as from other parents of handicapped children.

To meet this need, the Capper staff held its first infant program session in March, 1973, with three infants. Since then, 26 children have received services through the infant program. Some infants treated earlier in the program already have advanced into the project preschool, while others have been referred to more appropriate preschool settings.



Structure of the Program

The advent of the infant program has changed many attitudes and opinions in the community. For example, it has enabled health professionals to re-examine traditional methods for evaluating the handicapped child. In the past, diagnosis often was delayed as long as possible so as not to alarm parents unnecessarily. And, besides, it was believed little could be done for the child until he or she were older.

The infant program also has made new resources available to both parents and children. These include treatment facilities and a professional staff that can help parents teach their handicapped children important developmental skills. As a result, the frustration and lack of confidence parents experience in trying to teach handicapped children are no longer so overwhelming.

Nevertheless, the infant program has had its share of obstacles, not the least of which was to convince other community professionals of the value and effectiveness of early intervention.

Many contend that if the child has potential, development will occur eventually, regardless of professional intervention. While this is true in some respects, the staff believes early intervention allows the child to develop skills at an earlier age and helps prevent debilitation.

Unfortunately, this cannot be proven scientifically. Control groups cannot be established since rates of development are individual. And, besides, handicapping conditions contributing to developmental delay are quite varied.

However, it can be proven through objective measurement that orthopedically handicapped children improve and acquire behavior skills in areas where there has been therapeutic intervention. In other words, early therapy and education have a positive effect on children.

Referrals

In view of certain opposition to early intervention, the staff launched an information campaign aimed at increasing awareness among health professionals of the program and its benefits. Letters describing the infant program were sent to all community pediatricians and public health nurses to encourage referrals to the program. In addition to pediatricians and public health nurses, referrals may come from social workers, relatives and friends. All are acknowledged by letter, which includes a description of the child's evaluation plans.

Evaluation

When a referral is received, the project social worker telephones the parents or guardians and briefly describes the infant program. If interest is shown, an evaluation interview is scheduled to describe available services in detail and to determine whether or not the family wishes to participate. In addition, the social worker obtains the child's social history. This includes medical and treatment information, family profile and other data which may be helpful to the staff.

After the initial interview, the social worker obtains a medical history and therapy prescriptions from the child's attending physician. Once the information is assembled, evaluation sessions are begun.

Infants are seen with their parents for 30- to 90-minute sessions each week for six weeks. During this time, the child is observed and evaluated on a rotating basis by all members of the treatment team.

Social Service

The social worker closely observes parent feelings toward the evaluation, the staff and the agency. This frequently helps the treatment team find ways to better communicate with parents.

The social worker's assessment of parents' adjustment to their child's handicap helps the staff make recommendations for parent involvement in the program.

Physical and Occupational Therapies

The physical and occupational therapists together evaluate the infant. Testing methods depend on the child's age and degree of handicap. Developmental level may be determined by using one of two checklists compiled by the early education therapists. A more detailed discussion of assessment procedures appears on Page 27. Test forms information is in the Appendix.

Speech Pathology

The speech pathologist evaluates the infant's speech sound production, language comprehension and expression and hearing sensitivity. Also observed are the type and amount of stimulation parents give the infant. During several sessions, the child is observed at play and in interaction with his or her parents and the examiner. Various tests are used to measure development. (See Page 36.)

Class

The classroom teachers evaluate social, cognitive, and communication skills through the use of the Learning Accomplishment Profile and a check list compiled by the teachers (See Appendix A.) Distractibility and the parent-child relationship also are observed during the evaluation period.

Findings

The staff meets at the end of six weeks to correlate its findings. Test results, impressions and recommendations for treatment are presented by professionals from each discipline. By sharing information, each staff member can better understand the child's range of abilities and disabilities. This can promote consistency among treatment designs. On the basis of this information, the child is either admitted to the program or referred to another appropriate agency. In no case are parents and the child abandoned

Treatment

If the child can benefit from services at The Capper Foundation, a treatment program is tailored to meet his or her particular needs. Treatment goals are revised and expanded as the child progresses. Objective performance records are just as useful in working with infants as they are in working with older children. Therefore, the techniques are applied in therapy programs when possible.

During the weekly sessions, infants usually are seen by each discipline for 30 minutes. If infants cannot tolerate lengthy sessions, they are seen in 15-minute time blocks.

Physical and occupational therapists treat the child individually on alternate weeks. Although they work on the same skills, therapists feel they may use different techniques and approaches which are of value to the child and to the parents.

Importance of Program to Parents

Whether the handicapped child is an infant or preschool age, parents play an important role in his or her treatment.

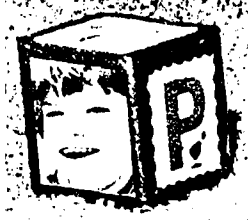
Staff members help parents to understand the nature of their infant's handicap and its ramifications. They also help parents to understand their child's abilities and to view realistically his or her potential for improvement.

Often parents do not fully comprehend the child's total range of abilities and disabilities, nor do they know how to help. Perhaps the physician's explanations were too complex. Maybe worried parents did not hear (or did not want to hear) what was said during the doctor's discussion.

Through repeated contacts with the treatment team, parents gradually acquire a better understanding of their child's diagnosis and what the medical terminology implies.

Because parent involvement is a major emphasis in the early education project, the next chapter is devoted to its description.

Parent involvement is an integral part of Early Education.



Parent Program

From the outset of the early education project, the staff recognized that parent cooperation and involvement would be needed for a successful treatment program.

Since children spend far more time at home than they do at the treatment center, it is important for parents to extend treatment goals into the home setting.

However, parents frequently are overwhelmed by the seriousness of their child's handicap. They feel inadequate in dealing with their child, and they believe treatment should be left to professionals. It is the staff's responsibility to educate parents and to help them develop confidence in their ability to work with their children.

The three primary goals of the parent program are to increase parent understanding of their child's condition, to broaden parent knowledge of ways in which to intervene therapeutically with their child, and to develop parent awareness of their feelings and emotional responses to the child's handicap.

Accomplishment of these goals should give parents positive and realistic attitudes toward their child and his or her treatment. Parental acceptance and understanding is essential if they are to help the child adjust to and cope with his or her handicap. Failure to achieve realistic acceptance of the handicap can harm the child, especially if it is manifested through over-protectiveness, indulgence, fostering excessive dependence on adults and overt or subtle rejection of the child.

Parents can be involved in program activities in a number of ways. Included are monthly evening meetings, small discussion groups, social gatherings, videotape reviews,

Home visits enable staff members to esta

observations, home visits, l
programs, a newsletter, pre-and
staffing discussions, counseling
informal contact with the staff.

The early education team doe

Evening parent meetings are held once a month, and both parents are encouraged to attend. The meetings are similar to public school parent-teacher meetings.

A major portion of the meeting is devoted to a speaker who usually discusses a topic which is of common interest to parents of handicapped children.

Committees, comprised of parents and staff, report on matters such as legislative action, program planning and public affairs. This is followed by a question and answer session. The meeting closes with a social hour, which gives parents an opportunity to meet and talk with the staff and one another.

Some successful programs from the past three years appear below.

Each year, parents are polled on the value of evening group meetings and topics of interest for future meetings. The survey also solicits parents' opinions on other aspects of the early education project. Results are presented and discussed annually at one of the evening meetings. Whenever possible, suggestions for program improvement are implemented.

At one point, it was discovered that new parents were reluctant to attend meetings because they did not know other parents. The project director and social worker decided to assign new parents to a veteran couple.

The veteran couple contacts the new parents and invites them to the meeting. In many cases, veteran parents accompany new ones to meetings until they become acquainted with other families.

Attempts are made to pair couples with similar backgrounds and interests. Each couple is given a card listing information about the other couple. Included are names, phone number, address, occupations; their child's name, age and disability as well as names and ages of other children in the family, and where they attend school.

Topic	Presented by
Parents of Handicapped Children	Psychiatric social worker
Purpose and Rationale of Preschool	Early education teachers
Purpose and Rationale of Social Services and of Speech Pathology	Project social worker and speech pathologist
Purpose and Rationale of Physical and Occupational Therapies	Project physical and occupational therapists
Characteristics of Cerebral Palsy and Myelomeningocele	Area pediatrician
Managing Behavior of the Handicapped Child in the Family; Group Discussion	Behavioral psychologist
Tour and Discussion of The Capper Foundation	The Capper Foundation
Psychological Services	Staff psychologist
Parent Program Services for the Retarded	Topeka Association for Retarded Citizens panel
Genetic Counseling Services	Genetic Counseling Center
Perceptual Motor Difficulties and Therapeutic Intervention	Capper Foundation occupational therapists
Parent Discussion of the Physically Handicapped Child in the Context of Family Life	Social worker
Techniques of Positioning, Handling and Feeding the Physically Handicapped Child	Project physical and occupational therapists

This procedure has increased attendance of both veteran and new members.

Group discussions for mothers were arranged under the guidance of early education teachers and the project social worker in February, 1973. These were designed to give mothers an opportunity to discuss special problems, feelings and personal concerns that cannot be handled at the evening parent meetings.

In this way, mothers become aware that others experience the same concerns, feelings, frustrations, hopes and desires. For some mothers, the discussion provides a break from

There are three mothers' discussion groups at Capper.

the daily routine of child care and enables them to re-enter the adult world for a while. Since the discussion groups meet during class sessions, mothers can feel secure in the knowledge that their children are in capable hands.

At the beginning, groups of eight to ten mothers met bi-weekly on alternate weeks in the morning and the afternoon. Mothers chose to attend morning or afternoon sessions depending on when their child was at the center.

Initially, they were asked to describe what they hoped to get from the group, and how it might be of benefit to them. Meeting topics were determined by the mothers. The staff assisted by providing input and guidance for discussion.

Shortly after the sessions were established, each group developed separate areas of interest. The morning group, consisting of mothers with younger preschool children, talked about their handicapped children, their encounters with doctors, how relatives react to their children, the handicapped child's effect on home life and other personal concerns.

On the other hand, those in the afternoon sessions with older preschool children expressed a desire to learn more about treatment programs at The Capper Foundation. The contrast in priorities and concerns of the two groups was at least partly due to the children's age differences.

Mothers of older preschool children had had more opportunities to express feelings about their children. They already had experienced and found solutions to some of the problems encountered during their children's early development.

However, mothers of younger children were relatively unfamiliar with the treatment program. They were discovering that others experienced similar difficulties and shared the same concerns about their children's handicaps and related problems.

For a while, the morning and afternoon groups were combined. It was felt that mothers of young children could benefit from the experiences of mothers of older ones.

Currently, there are three discussion groups. One is for mothers with children of varying ages, and another is for mothers of two-year-olds. A third group meets during biweekly infant program sessions.

In order to keep meetings responsive to the mothers' needs and interests, the project director and social worker ask mothers at the end of the year to share impressions of their group experience.

Our interview results have shown that mothers prefer an open sharing of concerns and feelings to a discussion of prearranged topics. Mothers have indicated that group discussions provide an opportunity for learning more about themselves and the way they relate to others.

Social events serve as a constructive supplement to formal evening meetings. Activities include a fall picnic, Christmas dinner, summer swimming party and other family oriented events which are planned by parents. In this way, parents and staff can establish rapport in a casual manner away from the institutional setting. And, the value of social contact is reaffirmed for parents who have isolated themselves.

Videotapes of children performing treatment tasks in each therapy and in the classroom are shown to parents twice a year. The early education treatment team elaborates on the tape and encourages parents to raise questions and to discuss their child's functioning at home and at school.

Observations in class or therapy are scheduled at the parents' or therapists' request. Each department and classroom is equipped with a two-way mirror so that parents can candidly view specific treatment techniques. Afterward, the therapist or teacher elaborates on what parents observed.

Home visits are made periodically by the staff to better understand the child's environment and to assist parents in their child's treatment at home. The visits enable parents to interact with the staff in familiar surroundings, which can strengthen parent-staff rapport. (Home visits are discussed in greater detail on Page 33.)

Home programs are essential to parent involvement and are used by all staff members. Techniques are demonstrated and guidelines are described by the various disciplines to help parents and child work together in the home. Parents are not forced to participate in structured home programs if they feel they cannot handle them. (Home programs are discussed in more detail on pages 23, 33, and 38.)

Pre- and post-staffing interviews with the social worker enable parents to raise questions and to understand treatment goals. Interviews also help parents and staff maintain a better perspective on what to expect from the child, as well as assure a realistic approach to program planning efforts.

Besides structured activities, parents receive a bi-weekly newsletter about classroom activities, other project families and staff.

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The early education team con-
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ɔ various ways they can become in-
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In cases where parents make
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ɔgram, the staff will try to find out
ıy and make every effort to deal
th parents on their own terms.

dren.

Components of Project—
Use of Measurement Techniques
—PRESCHOOL—

The preschool classrooms at The Capper Foundation are aimed at development of individual growth in self-help, social and cognitive skills.

There are three separate classes serving children of various ages and academic levels. Classes are held in two adjacent rooms, called the "Owl" and "Pussycat" rooms. Both rooms are served by a common observation room, and both are accessible to the playground. The staff consists of two teachers, two assistants, an aide and volunteers.

The Owl Room serves as home room for older and more advanced children preparing for public school or lower primary special education classrooms at The Capper Foundation. These children attend four days a week from 9:30 a.m. to 2:00 p.m. The schedule is as follows:

9:20 - 9:30 **Arrival Time** - Teacher is free to talk to parents about any concerns they or the teacher may have. Children find their lockers and put away their coats.

9:30 - 10:00 **Table Top Activities and Individual Programs** - Children find their names at the table and sit down. Each works on assigned tasks such as learning to print his or her name, completing worksheets, sorting colored objects, working puzzles, replicating color patterns, stringing beads and learning to use scissors.

10:00 - 10:15 **Large Group Time** - Attendance is charted, and the date is displayed on a flannel calendar and discussed with the children. Other topics center around such things as sound, who am I, Easter, April, animals and how things grow. The theme is emphasized through songs, stories, games, experiments, records and other activities. The theme changes at least every two weeks.

10:15 - 10:30 **Free Play—Toileting**

10:30 - 11:00 **Language Stimulation and Conceptual Learning** - Children are encouraged to give appropriate verbal responses and to answer in complete sentences. Distar Language[1] is sometimes used. Other programs include learning concepts such as spatial relations, size, same and different and producing the sound that corresponds to a specific letter.

[1] *An instructional system.* **Science & Search Assoc., Inc.**

11:00 - 11:15 **Individual Programs and System 80**[2] - The individual programs include such tasks as name and shape recognition.

11:15 - 11:30 **Film Strips** - All children view a film in the Pussycat Room. Films, obtained either from the public library or the Kindle Series, emphasize concepts such as size, textures, animals and feelings.

11:30 - 12:30 **Lunch** - Children prepare for lunch and are helped with their feeding skills. Basic manners are stressed.

12:30 - 1:00 **Distar Color Group and Reading Readiness Group** - The reading readiness group introduces some sight reading, but the main emphasis is on producing sounds for specific letters, and finding and naming objects that start with that specific sound. The Houghton-Mifflin Series is used.

1:00 - 1:30 **Arithmetic** - Some children are worked with individually on numeral recognition through System 80. Other children are worked with in a group on labeling numerals or on Distar Arithmetic.

1:30 - 2:00 **Art** - The art activity usually corresponds to the day's theme (e.g., when the theme is sounds, tambourines are made out of tin pans.)

The Pussycat Room is the homeroom for the younger and more dependent children. Most of these children are still in a parallel play stage and do not have verbal communication skills. Special programs are developed to stimulate a method of communications development with the child. The schedule is as follows:

9:00 - 9:10 **Arrival** - The teacher is available to discuss concerns and problems with parents. The children are greeted by workers and are encouraged to find their lockers and hang their wraps. Some children have free play while the rest go to the Owl Room for a language stimulation group.

9:10 - 9:30 **Group Concept Teaching** - The teacher and speech pathologist lead an imitation group which consists of teaching language concepts and communication skill.

9:30 - 10:30 **Snack Time—Toileting** The children find their places at the table and serve themselves. Spontaneous conversation is encouraged during snack time.

10:30 - 11:15 **Individual Conceptual Training and Outdoor Activities**

11:15 - 11:30 **Film Strip Time**

11:30 - 11:45 **Preparation for Home** Children have free play and help put away toys and materials.

11:45 **Departure**

The 12:30 - 3:15 session consists mainly of two-year-olds who have progressed through the infant program. These children meet in the Pussycat Room, and their schedule is as follows:

12:30 - 1:00 **Free Play**

1:00 - 1:15 **Greeting and Imitation Group** - Each child is sung to and encouraged to respond by singing back and raising his or her hand when asked if he or she is here. Finger games and action songs are used to encourage motor imitation, body image and self identification.

1:15 - 1:30 **Group Concept Teaching** - As previously described.

1:30 - 1:45 **Free Time**

1:45 - 2:00 **Preparation for Snack** - The children are encouraged to work on self-help skills such as putting away toys, washing and drying hands and finding their places at the table.

2:00 - 2:15 **Snack Time** - The children are worked with individually on feeding skills such as using a

The reading readiness session emphasizes the need to produce sounds for specific letters.

(2) *Audio-Visual teaching aid*

spoon and holding a cup.

2:15 - 3:00 **Individual Conceptual Training** - Skills worked on during this period include attending, labeling, completing a task, manipulative tasks (pegboard, puzzles, block building, etc.), discriminating by pointing to objects or giving a specific object, following instructions and pointing to or giving a specific object. Art activities - such as paper tearing, finger painting and pencil and crayon scribbling - also are offered.

3:00 - 3:15 **Film Strip Time**

3:15 **Departure**

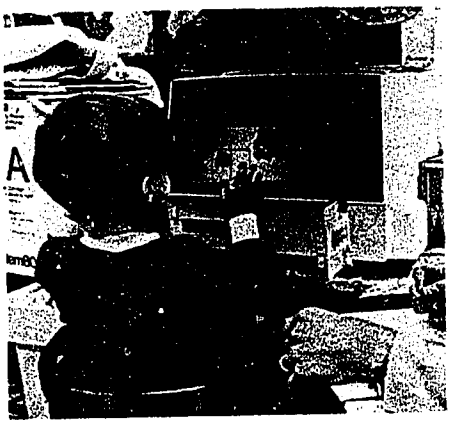
The overall objective of the preschool program is to offer a curriculum comparable to that of a regular preschool setting. This includes exposure to music, art, show and tell, games, outdoor activities, science, field trips, swimming and the use of public facilities such as the library and the park.

Rationale for Early Intervention

Educators agree that it is easier for a child to initially learn the correct way than it is to replace incorrectly learned behaviors with the right ones. It is also evident that during the period of rapid growth, the child is particularly vulnerable to change. This critical period occurs during the preschool years.

"If one were to graph learning from conception through maturity using a ratio scale that considered learning in comparison to what was known at each preceding level, it is a reasonable assumption that the sharpest rise in the curve would precede the third birthday."(3)

Early intervention for orthopedically handicapped and developmentally delayed children minimizes inappropriate learning. It also provides an opportunity for



System 80 helps teach many concepts.

children to function developmentally as nearly as possible to their chronological age levels in social, emotional and cognitive skills. Early Education is imperative when a child's developmental lag is still small, and possibly eradicable.

"If the child's preschool years are characterized by neglect and deprivation, his or her growth will suffer, and severe and lasting effects of such deprivation will result. If, however, the formative years are characterized by exposure to a wide variety of learning activities and social contacts, skilled teaching and intelligent guidance, then healthy growth and adjustment occur."(4)

Evaluation

A child who is being considered for The Capper Foundation's preschool program undergoes evaluation in the classroom. Usually the child is evaluated during a two-week period, if family circumstances permit and if the child makes a satisfactory adjustment.

The **Learning Accomplishment Profile** by Ann Sanford is the most frequently used assessment tool. Depending on the child's academic level and physical disabilities, items from other assessments may be introduced. These include the Dallas Preschool Screening Test, Project HOLD Screening Instrument, Peabody and Gessel.

Theresa Jolly, classroom assistant (background), records children's labeling responses.

Besides standardized assessment tools, the teacher also carefully observes separation from parents, adjustment to new environment and people and interaction with family, peers and teachers. In addition, the teachers observe the eye contact, attending behavior, alertness, play behavior, self-care and habits of the child.

(3) Ruth Nixon, Clifford L. Nixon, **Introduction to Early Childhood Education.** *Chapter 10, page 143.*

(4) Todd Hefferman, **The Years Before School,** *Chapter 1, page 7.*

During evaluation, parents may observe and ask questions, and they are informed daily of their child's progress. Results and recommendations to parents appear in a staffing report summarized by the social worker.

Setting Treatment Goals

Initial goals for each child are determined during the evaluation period with the use of standardized assessment tools and observations. Added goals are established by using assorted checklists (See Appendix), Distar Placement Test, System 80, pretests, and observations of existing behaviors in personal-social relationships and cognitive skills. The child's level of cognitive and social performance is discussed in periodic staffings, at which time his or her goals are reassessed.

A sequential program is designed after goals are established. Each program is planned using cues, models, prompting and sequential steps. This enables a child to move on to the next sequential step and accomplish the goal with few, if any, mistakes. Realistic criteria are established using a designated number or percentage of correct responses within a set time. If criteria aren't reached, the program is reassessed. This may require lowering criteria, redesigning the program or discontinuing it.

To develop and effectively evaluate teaching methods, a prescriptive teaching format is mandatory. At The Capper Foundation,* the early education program format includes objectives, procedure, criteria and evaluation. (See Figures 1 and 2 on Page 21.)

Measurement

The use of prescriptive teaching not only helps establish goals and structure sequential programs, but also helps develop objective measurement techniques. Measurement is valid only if the behaviors being measured are defined in observable terms.

Measurement is important in the early education classroom. It serves as a valuable tool in determining the effectiveness of individual programs and for assessing the rate and amount of the child's progress. Measurement records also show parents their child's progress or lack of progress. When children move into other programs, measurement shows the teacher what the child has achieved and what programs have been used.

Data collected on measured programs are compiled and then recorded on graphs. These graphs indicate the child's performance and provide the teacher with feedback needed to assess the program and to make changes in it. Graphs, checklists and subjective notes become part of the child's permanent record and serve as references for staffings and future programs.

On Page 22 are examples of 10 goals. Three have been broken into activities with methods to measure performance.

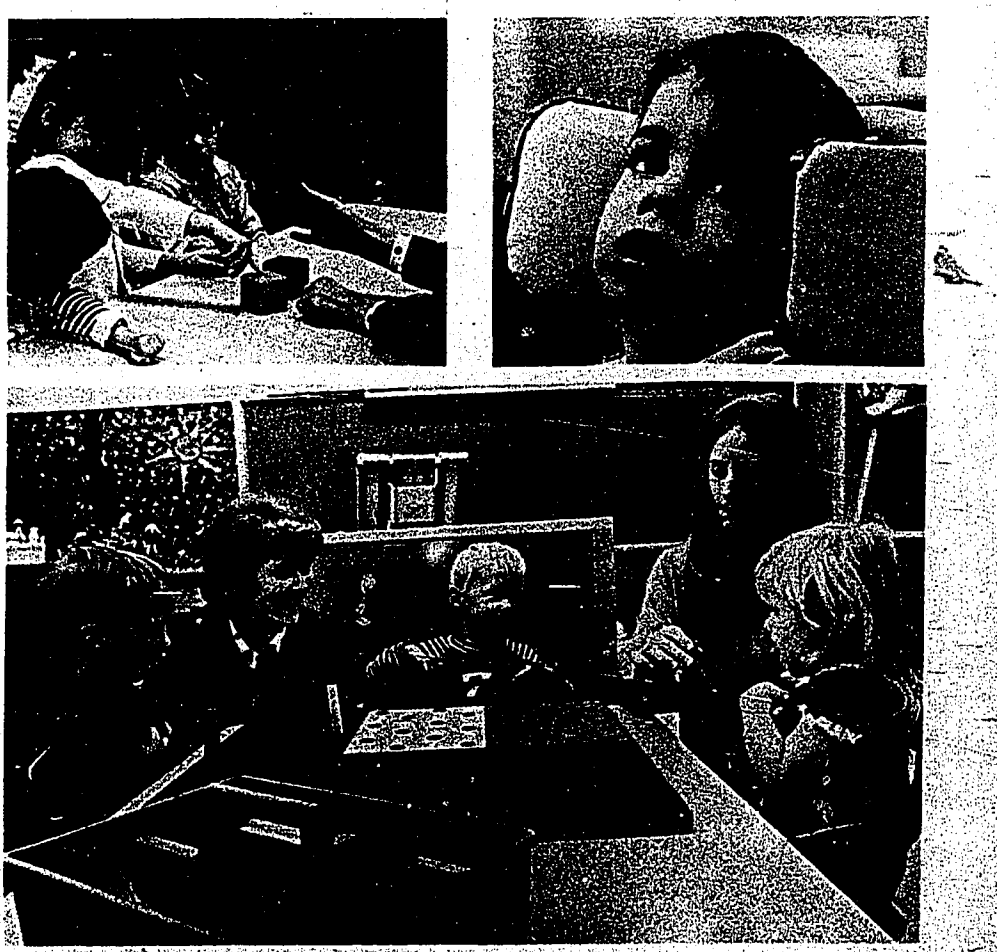


Table top activities range from matching colored objects, upper left, to manipulative tasks such as pegboard games, bottom photo.

Examples of two prescriptive teaching formats

Figure 1. **Date program started:** July 11, 1975

Concept: Empty - Full **Student:** John

Objectives:

Phase I: (objects) To correctly touch the full and empty containers when instructed

Phase II: (pictures) To correctly touch pictures of the full and empty containers when instructed

Pretests:

Phase I: —50%, 30%

Phase II: —30%, 25%

John must get 75% of the responses correct on two out of three post-tests on each phase before moving to the next phase or finishing the program.

Post-tests: Phase I: —90%, 80%, 85%

Phase II:—80%, 85%, 90%

Materials and Resources:

Phase I: 2 clear plastic glasses—1 sand, 2 green water

2 identical block wagons—1. block, 2. bean bags

Phase II: Distar Language Book A—pages 50, 51 and 54

Push-Pull, Empty-Full: Hoban (MacMillan Publishing Co.), Page 4

Procedure: Situation: Group_____Individual X

Phase I: Step 1. Teacher presents empty container and full container with the following demonstration: "This glass is empty. This glass is full" (Touching each). John is instructed to touch the glass that is empty. John is instructed to touch the glass that is full. This was repeated alternating instructions and placement of objects.

Phase II: Step 2. Teacher presents the objects again and gives no cue.

The same procedure is used with pictures from Distar Evaluation After Teaching.

Task analysis—number of steps in teaching procedure.

2 Phases - 4 Steps

Number of sessions: 10

Generalization of concept to other materials and settings.

John was instructed to touch the empty and full glasses during snack time, and to touch the empty and full toy "containers" during free time. He correctly responded more times after completing the instructional program

Type of reinforcement used. Was reinforcement effective?

Reinforcement: Received verbal and physical praise. This was an appropriate reinforcement for John.

Teacher critique of lesson. Were materials appropriate? Was the student interested in the lesson?

The number of objects used in the program seem excessive for John's capabilities. One set of objects and one set of pictures probably would have been sufficient and would have kept John from becoming so bored.

Figure 2.

Name: Linda **Date program began:** 2/20/75

Date program ended: 7/9/75

Age: 4 years **Number of sessions:** 33

Priority:

To tell where an object is in relation to a second object using spatial relation flashcards.

Behavioral Objective:

When spatial relation flashcards are presented, Linda will correctly answer the question, "Where is the_____(spoon, girl, airplane, house or car)?" using the words in front, behind, under, over, beside, in or on top. Criterion—at least 60% on each post-test.

Learning Sequence

Pretest—The child is asked, "Where is the_____?" when spatial relation flashcards are used.

Condition I: The child is asked to put the pencil_____(in front, on, in, over, etc.) the cup.

Condition II: Visual discrimination of objects. The child is asked to point to the pencil that is_____(in front, over, etc.) the cup. Only two stimuli are presented each trial.

Condition III: Visual discrimination of pictures. The child is asked to do the same as in Condition II, except spatial relation flashcards are used.

Condition IV: The child is asked, "Where is the pencil?" A pencil and cup are used.

Condition V: Same as Condition IV, except the spatial relation flashcards are used

Condition VI: Same as Condition I.

Condition VII: Same as Condition V.

Post-test—Same as pretest.

Reinforcement—A chip was given for each correct response, and, if she earned five chips or more, a star was given at the end of the session. No reinforcement, except verbal praise, was given during the pretest and post-test.

Instructional Materials

Spatial Relation Flashcards: Ed-U-Cards No. 496

Results:

Scores: Pretest 31%, 15% Criterion: at least 60% on each post-test

Post-test: 80%, 92%

Generalization:

At lunch Linda also was asked to tell where her utensils were and where her peers were sitting in relation to herself. She showed consistent improvement after completing this program.

Program Analysis:

Linda started in this program with a group of children. She missed several sessions, which resulted in her falling behind in the group. Because of this, two of the steps had to be repeated. This could have been prevented if criterion would have been set for each condition.

Examples of measurable goals and activities

Goals:

1. **Improve attending behavior.**
   A. Activity to measure - Table top activity (e.g., pegboard).
      (1) Way of measuring—Duration Recording: Record the amount of time that it takes the child to place three of the pegs in the pegboard. Another way would be to record the amount of time that the child stays on the task (manipulating the materials in the appropriate manner, which should be defined).
      (2) Way of measuring—Direct Measurement of Permanent Record: Record the number of pegs that are in the pegboard at the end of the designated time.
   B. Activity to measure - group activity.
      (1) Way of measuring—Time sampling: Record whether the child is attending (sitting quietly or responding to a question and looking at the speaker or the materials being presented) at the end of each two-minute interval.
      (2) Way of measuring—Record the number of questions that are directed to the child and the number of times the child responds correctly. Figure the per cent of correct responses by dividing the number of correct responses by total number of presentations, then multiplying by 100.
      (3) Way of measuring—Duration Recording: Record the length of time that the child continues to attend (sitting quietly or responding to a question and looking at the speaker or materials being presented).
2. **Improve visual discrimination of colors.**
   A. Activity to measure - Matching colored objects.
      (1) Way to measure—Record a + if the child correctly matches the color independently, an **M** if the correct response has to be modeled, or a **P** if the child has to be put through the correct response. To determine percentages, divide responses in the following manner:

$$\frac{\text{NUMBER OF CORRECT RESPONSES}}{\text{NUMBER OF POSSIBLE RESPONSES}}$$

$$\frac{\text{NUMBER OF MODELED RESPONSES}}{\text{NUMBER OF POSSIBLE RESPONSES}}$$

$$\frac{\text{NUMBER OF PROMPTED RESPONSES}}{\text{NUMBER OF POSSIBLE RESPONSES}}$$

      (2) Way of measuring—Direct Measurement: Record the number of colored chips that the child matches in each trial per session.
      Per cent of correct responses per session =

$$\frac{\text{NUMBER OF CORRECTLY MATCHED COLORED CHIPS IN SESSION}}{\text{TOTAL CORRECT RESPONSES POSSIBLE}}$$

   B. Activity to measure - Pointing to the correct color with distractors present.
      (1) Way of measuring—Child is instructed to point to the correct color with color cue presented. Measurement is the same as in A. 1.
      (2) Way of measuring—Record the number of correct colored objects that the child points to on command in each session.

      Percentage of correct responses per session =

$$\frac{\text{NUMBER OF OBJECTS CORRECTLY POINTED TO}}{\text{TOTAL CORRECT RESPONSES POSSIBLE}}$$

3. **Improve social interaction.**
   A. Activity to measure - Free play in dramatic play area.
      (1) Way of measuring—Event recording: Record number of times the child addresses a peer,(define) or has physical contact with a peer (define).
      (2) Way of measuring—Interval Reording: Record whether child is engaged in social interaction (talking to a peer, or touching the same material or touching peer)during each 10-second interval.
   B. Activity to measure - Lotto with child as teacher.
      (1) Way of measuring—Number of times child responds to social interaction (takes materials offered by leader and follows leader's instructions). Percentage of social interactions =

$$\frac{\text{NUMBER OF INTERACTIONS}}{\text{NUMBER OF OPPORTUNITIES TO INTERACT}}$$

      (2) Way of measuring—Duration Recording: Record the amount of time the child spent as a leader (define leader before recording).

4. **Improve instruction following.**
5. **Improve size discrimination.**
6. **Improve verbal recognition of shapes.**
7. **Improve matching and labeling common objects.**
8. **Improve sentence structure.**
9. **Improve the understanding of the concepts "yes" and "no".**
10. **Improve sound letter association.**

Home Programs

Since handicapped children develop more slowly, it is essential for parents to be involved in the teaching process.

According to the Office of Economic Opportunity, "A maximum of cooperation and interaction between teacher and parent is likely to produce the greatest benefit for the child."(3)

And, since children spend more time in their homes, it is vital that teachers place importance on making the home an extension of the classroom training program.

Through home programs, a child can have additional learning experiences which result in achieving more skills at a faster rate than when totally dependent on classroom time.

Home programs are written in a step-by-step procedure including goals and ways of reinforcing and correcting responses. Copies of the program go to parents, the teacher and the child's permanent file. (See Figures 3, 4, 5, and 6.)

The program is explained and demonstrated to parents before it is taken home. Then an evaluation form (See Appendix A) is sent to parents to solicit their feelings and ideas about the program.

In addition, a toy lending library gives the child an opportunity to generalize what he or she has learned, or is in the process of learning outside the classroom. It also helps the teacher measure performance, makes toys available which the parents might not be able to afford and provides parents with a structured time to spend with their child. For more information about the toy lending library, see Appendix A under Preschool.

(3)Office of Economic Opportunity, Project Head Start: **Parents Are Needed,** *Washington, D.C.: O.E.O., 1967, pp. 8, 9.*

Figure 3

1. Subject—Verb Agreement

Student: **George McCall**

This home program is to help George speak in complete sentences and to improve his subject-verb agreement. Try to work with George once a day on the following program:

Step 1: Hold up one yellow block and say, "This block is yellow." Ask George to say the same thing. If necessary, help him as he says it. If he answers incorrectly, correct him right away. If he says it correctly, praise him immediately by giving him a hug or pat and saying, "Good job, George."

Step 2: Hold up two yellow blocks and say, "These blocks **are** yellow." Then ask George to say it. Again, correct him if necessary and praise him.

Repeat steps one and two with other objects.

Figure 4

II. One-Step Commands

Student: **Carl Underwood**

Show Carl a ball and say, "Carl, let's roll the ball." Roll the ball to him saying, "Carl, I'm rolling the ball to you."

When Carl touches the ball, ask him to roll the ball to you. If he doesn't, take his hand and help him while saying, "Carl, you are rolling the ball." Repeat this procedure until he rolls the ball to you.

Work with Carl for sessions, not to exceed five minutes. At the end of the session, ask Carl to put the ball in the box. If he doesn't follow the instruction, take his hand and help him put the ball in the box while saying, "Carl, you are putting the ball in the box."

Figure 5

III. Student: **Alan Mills**

Toys: Bells and Balls

Tell Alan what he has in his hands and what he is doing. For example, "Alan, you are ringing the bell," or "You are touching the ball."

You may have to take his hand and ring the bell or squeeze the ball, while explaining to him what he is doing.

Figure 6

IV. Student: **Mike Murphy**

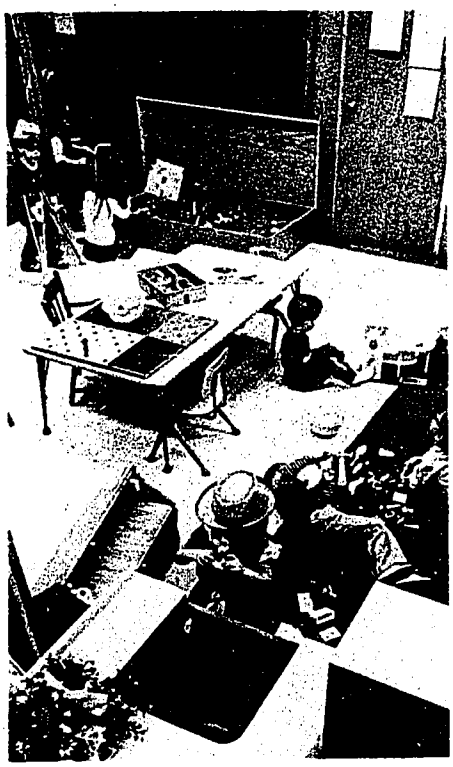
Big-Little Program

Step 1: Hold up big and little objects so Mike can see and reach them. Make sure Mike is looking at them and his hands are in front of him; then say, "Touch big." Whatever Mike touches first is the response that is counted. If he touches "big", praise him by saying something such as, "Oh, you found "big"." If he touches "little" instead of "big", show him "big", or ask his sister to show him. Praise his sister and then ask him to touch it.

Step 2: Hold up other big and little objects.

Step 3: Repeat exercise with different objects.

Be sure that you mix up the objects so that the big object isn't always to his right or vice versa. Let me know how he does and when he is fairly consistent. Then we will begin asking him to touch "little."



Children have opportunities during the day to participate in free play activities.

Toys are checked out according to the child's needs. The parents or students also may request materials. Teachers show parents how the materials should be used and encourage parents to practice the techniques and ask questions. Instructions on how to use the toy appear in the written home program or accompanies the toy on a description card from the toy lending program. When parents check out toys, a guideline card is provided which explains how, when and how often to work with their child. No definite time limit is placed on use of materials.

To extend the classroom experiences into the home through home programs and toy lending programs, it is necessary to be familiar with the child's home environment. This is accomplished through home visits. There, teachers observe how the child interacts at home and the kinds of materials available.

The most valuable home visits are made before the child is admitted into the program. During the pre-admission home visit, teachers have an opportunity to acquaint themselves with the parents and the child, and to make them more comfortable as the program begins.

In the early education program parents are given an opportunity to participate in the classroom. This starts with an interest-talent questionnaire (See Appendix A). Parents' interests are matched to classroom activities, and their effectiveness is periodically evaluated to see if changes need to be made. For example, if their child's behavior doesn't allow them to work comfortably in the classroom, or if the parent's presence hinders their child's performance, they can volunteer to serve in another classroom, office, library, adult workshop or in the lunchroom.

The following case studies illustrate the importance of objective

Children learn to attend through group concept teaching.

measurement and reinforcement in early education classes.

Case Study
Name: Sam A.

Sam is three. He was born with myelomeningocele, which was repaired. He also had rectal paralysis and bladder paralysis, bilateral tibial torsion and metatarus varus. In addition, there was partial paralysis of the lower extremities, and he developed hydrocephalus, which at about seven or eight months, arrested. Later, it was found that he had a rotating nystagmus.

Evaluation showed that Sam could benefit from preschool. The following are notes from the classroom evaluation staffing:

Sam's social interaction with peers consisted of rough and tumble play. Sometimes, he would stroke or pat a classmate, then end up pushing or squeezing him. Sam resisted nearly every structured activity, such as Distar, System 80, language stimulation and singing. This made it difficult to assess his performance.

He spontaneously imitated motor behavior, but would not join in nursery rhymes and song; clap his hands, imitate finger games, point to body parts or follow directions with a ball. He also refused to verbalize when asked, "What is this?"

Sam needed a program to decrease his inappropriate social interaction before he could benefit from a structured academic group.

Sam's first goal was to decrease the number of times he hit his peers during the preschool session. The program designed to achieve this goal was as follows:

Step 1: Tell Sam that boys and girls shouldn't hit each other and that he will get a happy face sticker if he doesn't hit before he hears the bell on the timer. (Show Sam the timer and set it for five minutes, so he has an understanding of the time lapse.)

Step 2: (Condition 1, Graph 1): Praise Sam and give him a sticker for every five minutes in which he doesn't hit a peer. Ignore him when he hits a peer and give immediate attention to the peer he hits.

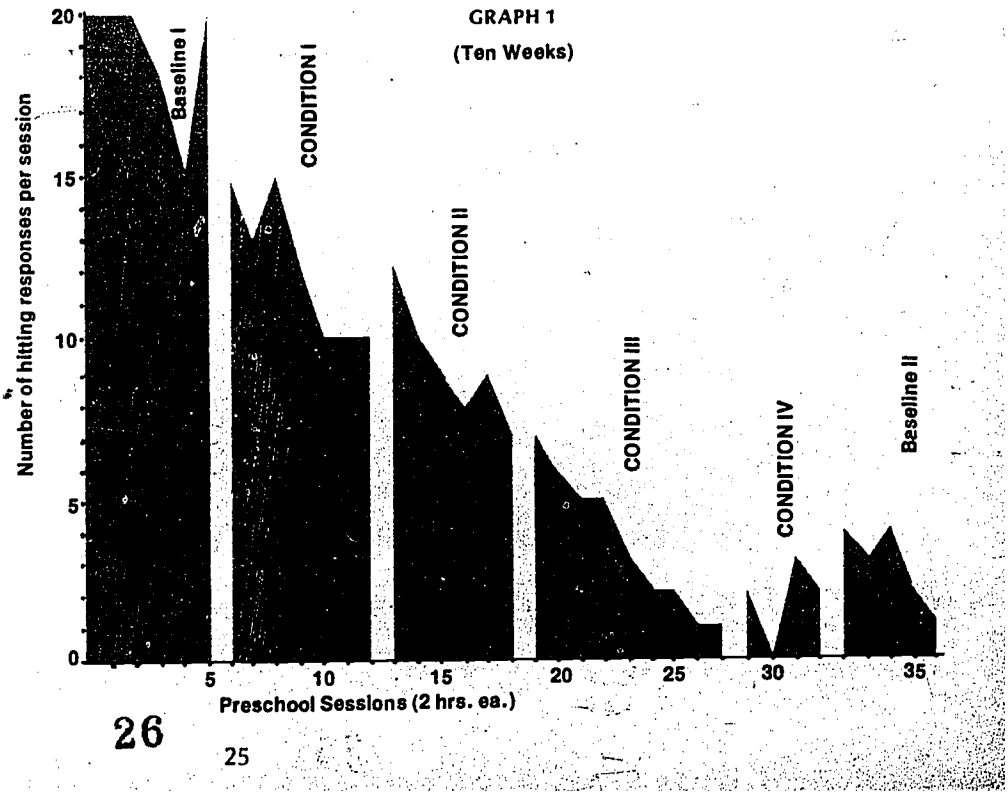
Step 3: (Condition II, Graph 1): Praise Sam and give him a sticker for every 10-minute time period that he doesn't hit a peer. Continue to ignore Sam's hitting behavior and give immediate attention to the peer he hits.

Step 4: (Condition III, Graph 1): Praise Sam and give him a sticker for every 15-minute time period that he doesn't hit a peer. Continue to ignore Sam when he hits and give attention to the peer he hits.

Step 5: (Condition IV, Graph 1): Discontinue the timer-sticker phase of the program. Praise Sam throughout the day for not hitting.

As Sam's hitting behavior decreased, he was phased into structured group activities. At first, Sam had difficulty attending to the teacher and materials presented, but he no longer disrupted the group with inappropriate social behavior. The use of chips for correct responses seemed to have motivated Sam into attending and participating.

One of the academic programs he was in was labeling action pictures and responding in complete sentences. The behavioral objective was as follows: When Sam is asked to tell what the boy is doing in a series of pictures, he will answer correctly



using the action words hopping, jumping, walking, running, standing or sitting. When Sam is asked, "Say the whole thing" (Distar Language method), he will answer in a complete sentence, such as, "The boy is _____, (the correct action word)." The program was as follows:

Materials—pictures of a boy hopping, jumping, running, walking, standing and sitting, taken from **Mixie the Pixie Can Do Many Things**; chips and stars.

Step 1 (Pretest, Graph 2): Sam was asked to label action pictures and to answer in complete sentences. No reinforcement was given.

Step 2 (Condition 1, Graph 2): Two action pictures were presented, and Sam was asked to point to a particular one (e.g., "Point to 'standing' "). A chip was given for each correct response. At the end of the session, Sam received a star if he had five or more chips.

Step 3 (Condition II, Graph 2): The teacher either stood, jumped, ran, sat, walked or hopped, and Sam was asked, "Am I_____(hopping, jumping, walking, running, standing or sitting)?" Sam had to give a correct verbal response of "yes" or "no" before he received a chip. A star was given for five or more chips.

Step 4 (Condition III, Graph 2): The action pictures were presented one at a time, and Sam was asked, "Is the boy_____ (hopping, jumping, running, walking, standing or sitting)?" He had to give a correct verbal response of "yes" or "no" before he received a chip. A star was given for five or more chips.

Step 5 (Condition IV, Graph 2): The action pictures were presented one at a time, and Sam was asked, "What is the boy doing?" He had to correctly label the picture using "hopping," "jumping," "running," "walking," "standing" or "sitting" before a chip was given. A star was given for five or more chips.

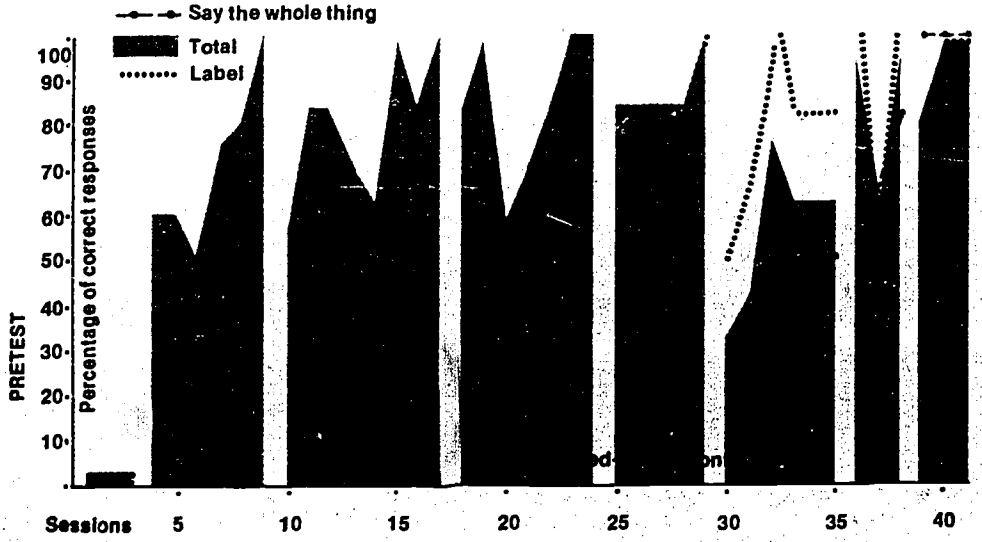
Step 6 (Condition V, Graph 2): Each action picture was presented one at a time, and Sam was asked to label the action picture as in the previous step. After a response, Sam was asked to say the whole thing, and the teacher immediately demonstrated the correct response (e.g., "The boy is jumping"). If Sam didn't say the whole thing, the teacher used the reverse chaining procedure, until he responded correctly. Chips were given for each correct response that was made the first time. A star was given for five or more chips.

Step 7 (Condition VI, Graph 2): Same as Step 5, except no demonstration was given for answering in complete sentences.

Step 8 (Post-test, Graph 2): Same as pretest.

Except for the pretest and the post-test, the correct answer was modeled throughout the entire program if an incorrect response was given.

Graph 2



Teacher joins children in free play activities.

Physical and Occupational Therapies

Therapist evaluates child's range of motion.

The Capper Foundation's Physical and Occupational Therapy departments are staffed by three registered physical therapists and three registered occupational therapists. Each department also has two aides, as well as university students who perform field work at the Foundation.

The Early Education team is served by a physical and an occupational therapist. Treatment in both departments is primarily geared to encouraging acquisition of normal developmental skills in young and severely handicapped children. Therapists work together during evaluation and treatment.

Prior to evaluation and treatment, prescriptions are obtained from pediatricians, orthopedic surgeons or neurologists. Monthly orthopedic clinics enable therapists to keep orthopedic surgeons informed on the child's status. The Early Education team also reports results to the pediatricians so they can better deal with the child and his or her family.

Most children are treated individually in 30-minute sessions. From one to four weekly sessions are scheduled depending on the child's needs. Treatment may take place in either department, or in the classroom or the speech department where therapists can focus on neurodevelopmental positioning and treatment. Swimming programs also augment treatment for some children.

Treatment techniques include neurodevelopmental, reflex and sensory-integrative therapy; range of motion; muscle strengthening; and gait training. Exposure to outside programs and workshops increases the staff's awareness of new treatment techniques that also can be applied in therapy.

Early Intervention

The child's first few years of life are critical in the development of motor skills. According to Berta Bobath,[1] "early treatment is important because of the great adaptability and plasticity of the infantile brain (which during the first 18 months) is not only a stage with the highest potential for learning, but also for adjustment to cerebral damage."

Early therapeutic intervention can reduce the effects of abnormal reflexes and muscle tone, as well as facilitate development of normal motor skills.

As Elizabeth Kong states in **Developmental Medicine and Child Neurology,**[2] "frequent repetition is necessary, and treatment must therefore be brought into the child's daily life and every day handling." Parents can be the key to their child's success if they effectively act upon therapists' suggestions for treatment. Parents who better understand their child's abilities and disabilities are able to cope with the physical aspects of the disability, as well as their emotional reactions.

Evaluating and Setting Treatment Goals

Acceptance into the Early Education Project is preceeded by a three-week evaluation. Methods of evaluation differ depending on the

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sts may be involved: *Denver Devel-*
›mental Screening Test, Milani
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ent Chart; Southern California Sen-
›ry Integration Test, and Beery De-
›lopmental Test of Visual-Motor In-
gration.

When test results are complete, commendations are made which ay include referral to another agen-', out-patient services or in-patient eatment. The Early Education team en meets to discuss results and-- ›ordinate treatment goals.

Goals are established through the bjective Measurement method scussed on Page 29. Accordingly, ng-term goals are set as well as

Bobath, Berta. "The Very Early Treatment of rebral Palsy," Developmental Medicine and ild Neurology, Vol. 9., No. 4., August, 1967, . 373-390.

Kong, Elizabeth. "Very Early Treatment of rebral Palsy," Developmental Medicine and ild Neurology, 1966, pp. 198-208.

intermediate short-term goals aimed at achieving the predetermined criterion. The therapists then determine activities which will help the child accomplish short-term goals.

It's important with young children to plan several activities which encourage the same skill. Each activity should be introduced in normal developmental order so the child can use each achievement to build toward his or her goal. This builds motor skills in normal sequence and avoids development of splinter skills which have no foundations.

This is not to say that the activity must be done, nor will it always be performed in the conventional manner, especially when working with multiply handicapped children. Therefore, creativity and flexibility in planning and administering activities are necessary to help the child achieve.

Tables 1 and 2 in the appendix are examples of typical short-range and long-range goals.

Measurement

In occupational and physical therapy, objective measurement provides feedback on the program's effectiveness and maintains consistency regardless of who is supervising the therapy. This would include parents, therapy affiliates and other therapists as well as ancillary staff.

It also provides a continual record of performance for the therapist.

Through charts and graphs, periodic variations in performance are seen readily, as well as trends toward success or failure. In this way, problem areas can be identified and corrected. Of course, data collected from unsuccessful programs are just as important as data which are obtained from successful ones.

Subjective observations, such as change in family situation or illness,

Possible Measurable Motor Skills
Physical Therapy

Activity	Position	Measurement
(1) **Head Control**	Prone	Event Frequency Duration
	Supine (pull-to-sit)	Responses/Number of trials
	Side-to-side	Responses/Number of trials
(2) **Sitting Balance**	Tailor	Duration
	Side-sitting	Duration
	Long-sitting	Duration
(3) **Prone on elbows**	Same	Frequency/Duration
(4) **Prone on extended arms**	Same	Frequency/Duration
(5) **All-fours position**	Same	Frequency/Duration
(6) **Reciprocal creeping**	All-fours	Time/distance Event (Number of recorded movements)
(7) **Kneeling balance**	Knees	Distance/time Duration Frequency/time to get to knees
(8) **Knee-walking**	Knees	Distance/time Time/distance
(9) **Ambulation**	With walker	Time/distance Distance/time Number of Movements/time
(10) **Rolling**	Supine-prone	Number of Correct/trials

Breakout of 3 of 10 skills

1. Improve head control
   A. Activity to measure-Prone on barrel
      (1) Way of measuring-Note number of times head is raised in five minutes.
      (2) Way of measuring-Note length of times head is raised on three trials.
   B. Activity to measure-Supine in barrel.
      (1) Way of measuring—Note positive response for total number of trials barrel is rocked side-to-side. Also note response when head is righted to midline.

(1) Way of measuring-Note number of times both elbows touch mat.
(2) Way of measuring-Note length of time subject bears weight on elbows during a set period.

Occupational Therapy

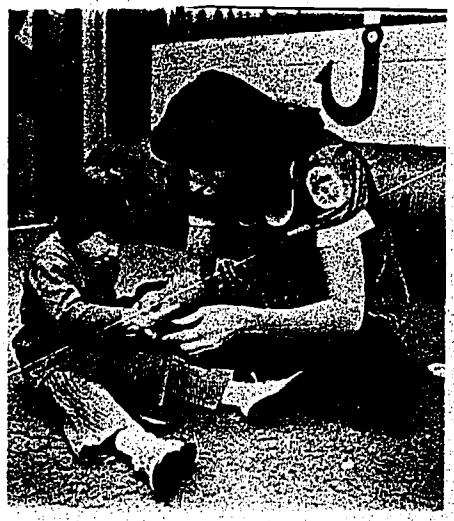
Activity	Measurement
1) Improve gross motor control of upper extremity in athetoid CP.	Record seconds able to maintain an arm in a specific position.
2) Improve gross grasp release.	Ask child to grasp specific object in five trials. Record percentage correct responses.
3) Increase independence in putting on own long-leg braces.	Use reverse chaining procedure. Child must perform each step correctly, two sessions in a row, before the next step is taught.
4) Increase range of motion in flexion-extension of the shoulder.	Place tape on wall at point of maximum shoulder flexion. Ask child to pull it off. Gradually move tape up as he masters each task.
5) Refine type of grasp pattern used.	Record type grasp pattern (superior pincer, inferior pincer, three-jaw chuck, or palmar) used to pick up each of ten-1/4" objects. Graph percentage of each.
6) Improve graphic skills.	Measure distance child's line is from original when tracing.
7) Improve body concept and awareness.	Ask the child to point to each of 10 body parts. Record percentage and which parts he got correct.
8) Improve shape perception.	Give child nine blocks (three circles, three squares, three triangles). With vision occluded, ask him to identify each, using stereognosis.
9) Increase ability to remove own front button shirt.	Use reverse chaining procedure. Child must be able to perform each step correctly two sessions in a row, before the next step is taught.
10) Improve visual memory.	Allow child to look at three colored blocks for 10 seconds. Cover them and ask him to name them. Give five trials. Record percentage correct.

On each of the above activities and techniques, it is important to first determine that the child has certain prerequisite skills. The specific criteria for each performance must be clearly stated. Conditions should be as consistent as possible each time.

Once a goal is established, it is broken down into smaller tasks, each of which requires a higher level of performance to attain the predetermined criterion. The tasks are set according to individual ability, and the child is rewarded once he or she attains them.

Since physically handicapped children are slow to achieve skills, this measurement method allows the child to experience success while working toward the goal.

Pages 29, 30, and 31 contain descriptions of some measurable skills used in physical and occupational therapies. Examples of long and short-term goals are in Appendix B.



Eye-hand coordination is an important goal in the child's development.

T4) The clinician will present point to one photo. C.J. pointing to the desired

Breakout of 3 of 10 Skills

1. **Improve gross motor control of upper extremity in an athetoid cerebral palsied child.**
   A. Activity to measure-Place hand on piece of paper.
      (1) Way of measuring-Measure number of seconds he is able to hold hand on paper. Gradually increase time. Reward him if time is better than last session of trial.
      (2) Way of measuring-Ask child to place hand on paper for X number of seconds. Increase number of seconds for meeting the goal. Reward for holding hand on paper when he meets goal.
   B. Activity to measure-Knock over tower of three blocks.
      (1) Way of measuring-Put tower at a specific spot and give him a certain amount of time to knock it over. The time can be decreased and the tower position can be changed.
      (2) Way of measuring-Ask him to knock over tower. Measure number of times he moves his arm 15 degrees or more, but does not knock it over. Reward for hitting tower first, then for knocking it down in decreasing numbers of movements.
2. **Improve gross grasp-release.**
   A. Activity to measure-Grasp-release of dowels.
      (1) Way to measure-Hold dowel horizontally. Ask child to approach it with hand in pronated position and grasp in palmar style with thumb participating. Ask him to hold it a certain number of seconds, then release it to you with his hand in the same position.
      (2) Way to measure-Hold dowel in vertical position. Ask child to approach it with hand in neutral position and grasp it in palmar style with thumb participating. Proceed as in (1).
   B. Activity to measure-Grasp-release of plastic one-inch cubes.
      (1) Way to measure-Hold block out to child. Ask him to take it from you. Do a reverse-chaining procedure to first shape grasp, then shape release (e.g., move hand toward block, touch block, open hand on block, close hand on block).
      (2) Way to measure-Ask child to pick up cube from body midline, hold it 10 seconds, then release. Give him five trials and graph percentage of successful attempts. He must do each step correctly.
3. **Increase independence in putting on own long-leg braces.**
   (1) Way to measure-Use reverse chaining procedure using following method:
      a. Fasten pelvic band
      b. Fasten thigh bands: Right, Left
      c. Fasten calf bands: Right, Left
      d. Fasten T-Straps: Right, Left
      e. Put calipers into shoes
      f. Roll into own brace
      g. Arrange braces correctly
   (2) Way to measure-After the child has successfully learned all the steps involved in the process, his performance can be timed. Give rewards when he successfully completes the task within decreasing amounts of time. These should be set by the therapist and announced before the task is begun.

Case Study

Name: Jack

Age at Evaluation: 24 Months

This child was born with an aortic malformation resulting in extremely high blood pressure. Before repair could be made, he suffered a cardiovascular accident resulting in left hemiparesis. During the immediate post-operative period following surgical repair, he developed a more severe right hemiparesis.

He was seen as an out-patient in physical therapy and occupational therapy from 16 to 22 months of age and was admitted into the early education program at 24 months.

Jack had good head control, eye-tracking and gross-motor function of the left upper extremity. He was able to sit in a small chair independently, and momentarily in a modified ring-style position. He did not demonstrate protective extension of the right arm, but did have weak protective extension of the left. He was able to roll over and, when prone, to pull himself along using his left arm. He was not able to pull to kneel or to pull to stand near a support. And he was unable to assume an all-four's position.

Since the beginning of Jack's treatment program in January, 1973, behavior has played a significant role in the success or failure of many programs. He has improved from crying the entire session to infrequent cooperation, and finally to successful periods intermingled with days when he is resistive.

Programs described here indicate gross motor skills are emphasized in physical therapy and fine motor skills are emphasized in occupational therapy. However, this does not mean these are mutually exclusive. The goals and programs in each therapy are considered and designed to en-

courage achievement of skills in both areas. For example, when practicing kneeling in physical therapy, he also practices reaching patterns being taught in occupational therapy. When doing fine motor tasks in occupational therapy, toys are placed on a raised surface, and he is encouraged to pull to kneel next to it.

Jack has acquired new gross motor skills in the last two years which include: independent long-sitting, scooting on his seat using the left arm and leg for propulsion and pulling to kneel and pulling to stand next to a supporting surface. Other skills include assuming all-four's position, creeping using a homolateral pattern, balancing momentarily on his knees, knee walking with support and cruising on his knees.

Fine motor programs include various facilitation techniques using Proprioceptive Neuromuscular Facilitation patterns, tactile stimulation and weights. Jack is now using his right upper extremity spontaneously in a rotary flexion-extension pattern. When gross motor skills in the right upper extremity improved, a program was developed to encourage purposeful reach and grasp.

Six pop beads were placed on the seat of a chair, and Jack was kneeling next to it. At first, Jack was required only to move his right arm in the direction of the beads. (Step 1). After one month, he did this five out of five trials. He was then required to move his hand toward the bead and touch it. (Step 2). He accomplished this in one month.

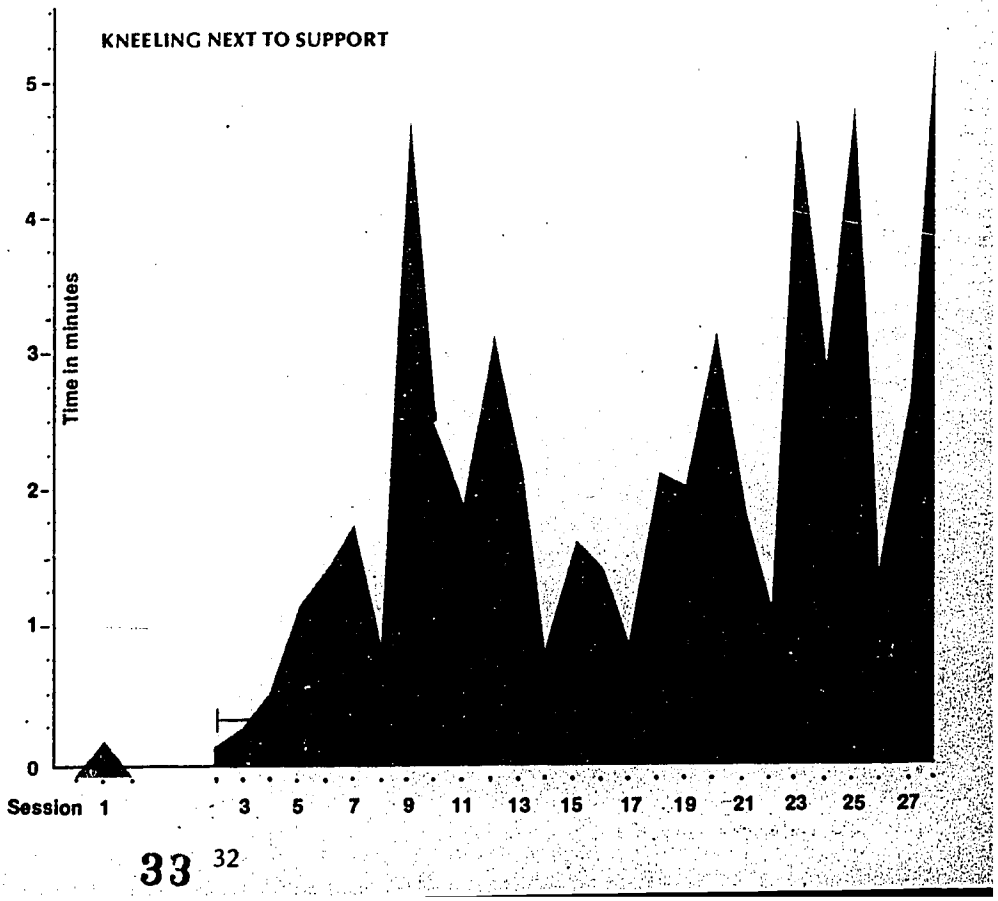
Next his hand had to be open when touching the bead. This is a difficult step to accomplish due to the total flexor pattern which dominates his right extremities.

An intermediate goal between Steps 1 and 2 is being started to teach Jack to open his hand with the elbow extended.

Six pop beads on a chair encourages purposeful reach and grasp.

While working on Jack's ability to bear weight on lower extremities, he was measured on his ability to bear weight after being rolled off a 36" ball to a standing position. The length of time he would bear weight while being supported was measured. He improved during the first three months, but during the fourth month he resisted being put onto the ball, as well as weight-bearing.

The goal was changed to independent standing in the parallel bars. The weight-bearing duration improved, but the external control necessary to facilitate bilateral weight-bearing was not possible. So the measurement was changed to supported weight-bearing next to a



stool. Jack's ability to remain in a weight-bearing position next to a support improved. But, due to slowness of equilibrium and protective responses, he was taken back a step to kneel standing.

The graph on page 32 shows that Jack's ability to kneel next to a support improved over an eight-month period. When Jack reaches criterion in this measurement, the next goal will be cruising on knees.

From this case history, we see that measurement helps the therapist re-evaluate the treatment program, carry it over consistently into other disciplines and provide the child and therapist with daily feedback of performance.

The home program often includes help for parents in feeding techniques.

Home Programs

The most consistent improvement is seen in children whose parents are wholeheartedly involved in home treatment programs. And, the success of home treatment programs hinges on how well they are adapted to the home environment, as well as the family's schedule. One of the best ways to design a home program is to make a home visit.

This enables therapists to observe physical surroundings and to discover skills the child will need to function at home. Furniture modifications or additional equipment can be recommended to help parents work at home with their child. Furthermore, therapists can watch the child in a familiar environment. And, the parent also may feel more assured knowing that the staff understands the home arrangement.

In addition to providing parents with a written home program, therapists demonstrate techniques and allow parents to practice them during treatment sessions. This enables therapists to coach parents on proper procedures. In subsequent sessions, parents are asked to demonstrate techniques they have been using with their child.

Copies of the written program are kept in the child's therapy file and also given to the social worker. If parents encounter difficulty in handling the program or meeting goals, they are encouraged to contact the therapists. In a model situation, the parents and therapists are in almost daily contact, so discussion may be frequent.

In cases where this is not possible, regularly scheduled parent-staff conferences allow review of home programs.

Follow-up sessions are scheduled so parents can describe and demonstrate home program activities after they have practiced them. This allows therapists to reinforce parent efforts, answer questions and make program revisions.

If a child receives therapy infrequently, it is often helpful to devise a structured measurement of home activities. This enables parents to record the child's progress and to gain feedback. Results can be discussed and new goals set during the child's therapy session.

This method is not recommended for everyone, but is helpful when parents require a more structured program and the incentive to carry it out with consistency.

In addition to prescribed home programs, other efforts are made to apply neurodevelopmental techniques to routine activities such as feeding, dressing and bathing the child.

Following are two abbreviated case summaries and examples of home programs administered by the Physical and Occupational Therapy departments.

Case Study

Name: Cindy S.

Age at Evaluation: 2 years, 6 months. Seen in Early Education Department.

Cindy was evaluated by the early education team. Her diagnosis was Myelomeningocele. The physical therapist found that Cindy was able to long-sit independently, to crawl forward in a prone position by pulling forward on her elbows, to get from prone to sitting and back to prone, to roll both directions segmentally and to assume an all-fours position. However, she could not make creeping movements or scoot in a sitting position.

Motion limitation was found in Cindy's ankles, and her hip and knee flexors were becoming tight. Cindy's upper extremities needed strengthening to assist her with ambulation and functional skills.

Home Program

(1) **Strengthen Cindy's** arms by doing 10 seated push-ups once a day. Place a three-inch thick book near each of Cindy's hips while she is in a long-sitting position. Tell her to push down on the books, with her hands flat, and lift her seat off the floor.

(2) **With Cindy in a long** sitting position, ask her to scoot backwards a few inches, then forwards a few inches using her arms. She may need assistance to scoot, since it is difficult for her. As this activity becomes easier, ask her to scoot farther. Cindy will probably respond better if she is scooting toward a toy and is allowed to play with it when she reaches it.

(3) **Stretch Cindy's hip flexors,** knee flexors and heel cords as demonstrated by the therapist. These activities should be done five times each, twice a day.

These exercises will be reviewed and modified when indicated by Cindy's performance. If you have any difficulty with them or questions about them, please contact me.

Physical Therapist

Home Program

In order to improve Cindy's self-dressing skills, we would like for her to continue to unfasten the Velcro closings of her braces, and we would like for her to do this each time her braces are removed. She is still slow but will improve with practice.

We are working on unbuckling the T-straps. The therapist pulls the strap back and pulls the pin out. Cindy then finishes by pulling the strap out of the buckle. We would like for this to continue at home.

Thank you very much for your assistance. As she practices these skills at home, she will see the value of learning them.

Occupational Therapist

The above home programs were demonstrated to Mrs. S., and she worked with Cindy while the therapists observed.

Push-ups on three-inch books.

Scooting backwards.

Strengthening hip flexors.

Case Study

Name: Greg

Age at Evaluation: 14 months. Seen in Infant Program.

Greg's diagnosis is psychomotor retardation. He displayed poor head and trunk control in all positions, as well as generalized hypotonia. An asymmetrical tonic neck reflex dominated movement patterns, and was especially strong on the left side. Other abnormal reflexes present included positive support neonatal, palmar grasp and Moro reflexes. Not present were labyrinthine neck righting to left, right and supine, and equilibrium reactions in prone and supine.

Flexor tone was predominate when supine. Extensor tone was present when prone. He neither rolled nor scooted. He could grasp a 1½-inch toy with the right hand, but not with the left. The therapists observed that his mother moved him in rapid and jerking motions. This did not allow him time to adjust his body position, and also tended to elicit the Moro reflex.

Home Programs

(1) Since Greg has an asymmetrical tonic neck reflex, movement of his head controls the position of his arms. When his head is turned to the right, his right arm tends to be straight and his left arm tends to bend. When his head is turned to the left, the left arm tends to be straight and the right arm bends. This will impair his ability to do activities such as feeding himself. If he turns his head toward the hand holding food, it will be difficult to get the food to his mouth. He should be placed in positions like side-lying, in which he can perform activities without using this abnormal reflex. The more he uses this reflex, the stronger it becomes. Stabilize Greg on his side and ask him to reach for toys. Reaching toward the midline of his body decreases the effects of this reflex. Alternate sides so he can use each hand.

(2) Place Greg on his stomach on the floor in front of a stimulating toy or a television. Ask him to hold his head up as long as possible. Do this several times a day. This exercise will improve head control and strengthen neck and trunk muscles.

(3) Place Greg on his back with his head and upper trunk resting on a pillow at about a 75-degree angle. Place your hands behind his shoulders and pull him to a sitting position. Ask him to pull his head up. As his head control improves, gradually reduce the angle until his head is flat on the floor.

(4) Place Greg either flat on his back or in a supported sitting position. Put a toy in his left hand and hold it at midline. Ask him to bring the other hand to it, and help him transfer the toy. Use alternate hands. This will help him get his hands together with assistance from one hand and will decrease the effects of the asymmetrical tonic neck reflex.

Each of these suggested activities does not have to be done every time you work with Greg, but can be varied. We recommend you set aside five minutes in the morning and five minutes later in the day to work with him. These suggestions also can be incorporated into his everyday routine.

Physical and Occupational Therapists

These suggestions are demonstrated to the mother so she can practice them. They are reviewed each week, and other suggestions for positioning and handling in various situations also are given.

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mittance into the program depends on a number of factors, including diagnosis of the speech impairment, the child's prognosis, age, severity of impairment and attendance potential.

The general goal of the program is to effect a positive change in the child's communication with his or her environment to the best of his or her abilities. This can be done by increasing or establishing one or more of the following behaviors: vocal frequency and diversity, attending, motor and verbal imitation, language comprehension and language production.

The types of communication impairments frequently treated include reduced language functioning and dysarthria with associated speech symptoms related to lingual, mandibular and labial dysfunction as well as laryngeal and respiratory dysfunction.

Other behaviors which could be established include nonspeech response modes, such as manual communication or communication aid development, as well as communication training skills with parents.

While children may be trained in the speech setting, they are more often seen in other locations. Physical and occupational therapies and classroom settings are examples.

Sessions are scheduled from one to several times weekly, depending on the severity of the impairment, attendance and program goals. The child may be seen either individually or with classmates. In the latter case, the clinician is able to observe the child's interaction with others.

Evaluation

The child is evaluated for three weeks. During this time, the speech pathologist administers a variety of speech and language measures to assess communication behaviors. These include observing the child in other settings, informal and formal testing and parent interviews.

Child and clinician participate in language assessment.

The communication behavior might best be assessed by observing functional speech and language interaction with peers, teachers and therapists, or while the child is playing alone.

Such indices as vocal frequency or diversity, language complexity measures or other language sampling techniques, might best be collected in the more functional settings.

By observing the child and parent at play, the clinician can gather specific information concerning interpersonal language. The clinician also can select the most appropriate tests to assess communication behavior by observing the child in other settings.

In these ways, the clinician can determine what items are reinforcing the child. This information can be used in formal testing.

Formal testing is conducted during several sessions. A test battery is tailored to each child's needs based on case and medical history, medical diagnosis and impressions and educational history.

Any one or more of the following standardized tests may be involved: *Hejna Developmental Articulation Test, Templin Darley Test of Articulation, Assessment of Children's Language Comprehension, Peabody Picture Vocabulary Test and the Northwestern Syntax Screening Test.* In addition, there are the *Utah Test of Language Development, The Boehm Test of Basic Concepts, The Carrow Test of Auditory Comprehension, Bang's Birth to Three Scale* and *The Columbia Mental Maturity Scale.*

In order to provide reliable measures of expressive language development, formal assessment also includes such measures as developmental sentence scoring, developmental sentence analysis and length complexity ratio-index.

In some cases, these standardized tests cannot be used with children with central nervous system damage, such as cerebral palsy. Reduced language functioning, motor impairment of the speech musculature, together with impaired use of the upper extremities, makes many commercially available tests inappropriate.

Therefore, many children are evaluated using informal measures. Pretraining assessment might involve vocal and motor imitation such as opening and closing eyes, kicking feet, nodding head and opening and closing hands. Developmental items for testing these behaviors are selected from such sources as *Bayley, Cattell, Denver Sheridan, Slosson, Gesell, Merrill-Palmer and Vineland.*

Hearing sensitivity also is assessed by observation and play audiometry.

Referrals are made, when necessary, to medical audiological sources for complete evaluation.

It is important to examine the speech mechanism of children with central nervous system damage, especially those with cerebral palsy. This can reveal information about the child's potential for oral speech production.

For example, diagnostic information can be obtained by assessing the primitive oral reflexes, such as sucking, rooting and bite reflexes. If these reflexes are present beyond two years, it is considered deviant, and alternate means of communication should be planned. Even if the potential for oral communication is doubtful, there is still a vital need for the child to develop receptive language, an expressive

form of communication and, most important, the ability to learn how to learn.

Among other features of the evaluation is the parent interview. During this time, the clinician collects case history information and discusses specific communication behaviors and the child's medical problems. Language measures also are administered. These include the *Bzoch-League Receptive-Expressive Emergent Language Scale for Children* and *The Verbal Language Development Scale.*

Parents also are asked to comment on their child's general level of communication behavior and to express their primary concern for their child's speech and language impairment.

Home Program

The qualities of a home environment cannot be matched in an institutional setting.

At home, the child interacts with parents, siblings and playmates in familiar surroundings. He or she has access to toys and other possessions.

In short, the home is a natural and relaxed atmosphere which can be conducive to learning new skills.

Given this situation, parents have an opportunity to help their handicapped child improve his or her speech and language behavior. This is not to say the responsibility for teaching language skills rests solely with parents. Rather, parents can be instructed on how to reinforce skills that are taught their child at the early education center.

And, most parents are eager to participate. They are concerned about their child's language impairment, and they want to do something to help.

Of course, there are times when parents show no interest. In these cases, the clinician may stimulate interest by arranging observation and counseling sessions to point out the need for a supplemental home program.

If parents are unwilling to participate, it is important to find out before more time is lost.

Success of parent programs depends on careful consideration of the parents' resources and constraints, as well as the child's program needs.

There are a number of different ways parents can be involved in speech and language training programs. They can help set goals, participate in diagnostic evaluation, report impressions of their child's performance, collect tape recorded language samples, or provide other observations which are helpful to the clinician.

Experience shows that parents are better able to select functional training activities and stimuli to insure realistic and manageable training events at home for themselves and their child. Or, the parents are able to help the clinician select reinforcers which are suited to both the home and the training setting.

It is important for the parents and the clinician to agree on a means to evaluate the home program. Whether it is a formal or informal measurement, it must be consistent for the child's benefit, as well as the clinician's.

Finally, the parents and clinician discuss the most appropriate physical position for the child to increase the effectiveness of home training. To help facilitate this, the physical therapist is consulted on how to inhibit persistent tonic neck reflexes. This plan is included in the home training program.

The following is a portion of a parent training program called *Speech Stimulation Program.*

It is intended for children who exhibit delay in babbling behavior. This condition is characterized by reduced or absent vocal frequency and diversity.

The goal of this program is to give parents specific skills in reliable presentation of a structured phonetic sound environment, reliable means of applying positive consequences for the child's desired vocal behavior and reliable reporting of the child's per-

Clinician trains parent on speech stimulation for home program.

formance during program presentation.

The procedure is highly structured and requires a good deal of the parents' and the clinician's time. Therefore, full parental cooperation must be stressed at the outset of the program.

The program begins with the clinician reviewing behavior reinforcement techniques with the parents. Material is selected from the *Behavior Management Series*.[1]

Among topics presented are a description of the need to increase vocal behavior; speech and language development and the function of the environment; and learning speech and sound production.

In addition, the clinician talks about the concept of operant behavior and how to control it, as well as reinforcement, shaping tactics and consequences. And, finally, the clinician discusses the sequence of training activities in both the home and at the center.

Once this is finished, the program moves on to the second part.

Parents first observe the child and clinician performing the training activity to be used in the home.

Next, the parents join the clinician while the program is administered. Parents are instructed to deliver social praise or other reinforcement to the child at the same time the clinician does. An observer watches and evaluates the parents' participation. If parents offer appropriate simultaneous reinforcement with 85 per cent accuracy during two consecutive sessions, they may move on to the next step.

Here parents trade positions with the clinician so they are seated in front of the child, with the clinician to one side.

(1)Hall, R. Vance, Behavior Management Series, H & H Enterprises, Box 3342, Lawrence, Kansas.

This time, the parents present both stimulus and reinforcement while the clinician provides simultaneous social praise or other reinforcement. Again, an 85 per cent criterion must be reached in two consecutive sessions.

Finally, parents present the program in the training setting with the clinician absent.

Again, the parent must deliver the program with 85 per cent accuracy.

Each session lasts ½ hour and takes place at the center. At the conclusion of each session, parents are given a checklist (See Appendix A). This shows how well the parents performed in relation to the desired target skills.

Once all training sessions are completed, parents are given a program packet and instructions for returning the feedback form on the child's performance in the home (See Appendix A).

Additional evaluation measures are completed by the clinician at program intervals. These include home visits and probes to determine program effectiveness.

This program has offered several benefits. First, results show that parents learn reliable methods for presenting stimuli and for correctly judging the child's responses. Furthermore, parents learn how to administer reinforcement appropriately.

This, of course, increases the clinician's confidence that the program is being presented to the child correctly in the home. Parents also feel more confident, especially when they use a structured feedback form to report their child's behavior in the home. The form also shows parents graphic proof of the child's progress.

Clinician provides sensory stimulation to increase expressive responding.

And, most importantly, this program creates a better attitude in parents toward home training activities in both speech and language programs, as well as other therapies.

There are many other programs which can be tailored to the specific needs of each parent. An early education newsletter reports general speech and language information. Videotape reviews give parents proof of their child's progress over a period of time. And, discussion of speech and language development and learning at evening parent meetings provides general information on long-term goal planning for the child with communication impairment.

Measurement

The child with cerebral palsy, or other multihandicapping conditions, often requires long-term speech and language programs.

It is, therefore, important to develop a precise set of goals and objectives for measuring performance. And, furthermore, there must be procedures for accurate assessment, and a method for analyzing the direct relationships between treatment and changes in the child's performance.

Systematic observation and recording is widely used in speech settings today for functional analysis of language behavior. Its popularity is the result of recent research in behavior modification, where collection of data has been an indispensable tool for diagnoses, programming and evaluation.

When a child enters the speech discipline of the early education program, the following procedures are initiated: diagnostic evaluation, assessment and program planning, and evaluation of strategies and individual progress.

Diagnostic evaluation

Results of the initial evaluation, described earlier, provide only basic information on the cause of impairment and the extent of the child's communication behavior in test situations. However, to plan a comprehensive program, there must be further assessment of the child's receptive and expressive language in his or her environment.

During assessment and program planning the clinician isolates those speech and language behaviors which apparently need to be changed or improved. This can be done by tape recorded samples of the child's communication behaviors. Samples can be collected in the home, in physical therapy sessions, in the classroom during free play or in the social skills area at the early education center.

Through tape recorded information or live observation, the clinician gains an understanding of events which affect the child's receptive and expressive language. In addition, this speech production reveals consequences which are evoked by the child's verbalization. Knowledge of these consequences can be used by the clinician to maintain effective communication, as well as to manage it. And, of course, this information can be included in training programs.

Before the program begins, a record of each child's operant level of speech and language behaviors is collected.

Observations may be in the form of single or multiple baseline measures of several behavior levels. These are recorded simultaneously, and eventually trained.

Event recording and per cent of correct responses is used most frequently to assess language behaviors. Included are: linguistic and syntactic forms used by the mother playing with her child, words used by the child in response to item presented by the clinician, or handpointing responses to picture-word vocabulary displays on a language board.

The clinician uses collected data to establish instructional objectives which are designed to increase specific speech-language behaviors and improve the child's communication.

These objectives include an operational definition of the speech or language behaviors the child will exhibit at the conclusion of the training. In addition, the objectives will show the conditions which must be present for the child to produce such behaviors, as well as the criteria for determining the child's acceptable performance.

Program planning proceeds when speech and language behaviors are

Parents tape recording language samples.

isolated and when baselines indicate stable rates of responding.

Task analysis is used in all language programs. This helps the child reach the target by learning increasingly difficult tasks with a minimum of error. In many programs, the sequence moves from comprehension to expression training. Next, comprehensive training strategies are designed for each child. The clinician analyzes the child's present level of speech-language functioning, the target behaviors to be trained and the skills and steps needed to learn the target behaviors.

Often used are specific learning tactics, such as shaping, fading, chaining and prompting techniques.

Specific language tactics can include modeling, expansion, reduction, repetition, and internal manipulations of sentence structure.

Training procedures and progress can be evaluated by the clinician through observational records, graphic charts and reliability checks.

On a general data form, the clinician records the child's language and speech behaviors during training sessions. It is necessary for the clinician to list proposed stimulus presentations on the data forms prior to the session.

In addition, the clinician should decide ahead of time on a set of symbols to show "correct," "incorrect" or "no response" for judging response events.

At the end of each session, the clinician judges progress or other kinds of response by the number of times the child makes correct and incorrect responses to the discriminative stimuli presented. Typically, the correct response rate is expressed as a percentage for the child's training session.

Other pertinent information such as the date, length of session, reinforcers used and reinforcement schedule are recorded on the data sheet.

During the program planning stages, the clinician usually determines a means of establishing reliability checks for each child. These checks show there is objectivity in evaluating the child's training performance, and that the child is exhibiting behavior change.

While reliability checks vary, they usually occur once or twice during each training step. As a practical consideration, other speech pathologists or affiliating graduate students at the center observe reliability checks.

Reliability is determined by an accepted procedure of comparing judgments of the child's performance between the clinician and observer. It is computed in a percentage by an accepted procedure of comparing agreements with agreements plus disagreements. For example, Clinician "A" agrees with clinician "B" on 27 of 30 response events, and disagrees on 3 of 30 response events. Therefore, $27 \div 27 + 3 = 90$ per cent observer reliability.

Many of the speech and language programs proceed in small steps and require specific response topographies.

The program philosophy is that speech and language behaviors are controlled by carefully arranged antecedents and consequences. And, reliable programming and judgment of the child's performance during training is necessary for improving communication.

The child's performance for each stated objective is recorded on a standardized graph. Observational data show the baseline level before target behaviors training. In addition, these data show the child's performance during each training step for the behaviors being taught and performance for probes administered at program intervals and at the conclusion of training. All of these determine the generalized effects of learning.

These data provide the clinician a continuing guide for evaluating training procedures and the child's progress and for planning changes in training strategy. Following are a list of possible measurable activities and a case study.

Techniques, such as this one, are used to put the child at ease during examination.

POSSIBLE MEASURABLE ACTIVITIES
SPEECH PATHOLOGY

Skill	Activity	Measurement
Vocal frequency/diversity	Present favorite toy in mutual play.	Event
Motor imitation	Say, "Do this." Push squeak toy. Give to child.	Per cent of correct responses
Instruction following	Ball on table. Say, "Push ball."	Per cent of correct responses
Labeling	Present object: shoe. Say, "What's this?"	Per cent of correct responses
Verbal interaction with peers	Peer group at play in preschool setting.	Interval
Attending	Hold up toys, functional objects. Say, "Look at flashlight."	Per cent of correct responses
Discrimination of familiar items in photographs for language board use	Present pictures of car, house, toilet. Say, "Show me, you want to go home."	Per cent of correct responses
Actor-Action-Object Production on language board	Present language board with pictures of child, sight word "go" plus picture, plus picture of occupational therapist. Say, "Lisa, show me, 'Lisa go OT.' "	Per cent of correct responses
Language expansion	Hold picture, say, "I see a big car. What do I see?" Response: Big car.	Per cent of correct responses
Appropriate social praise by parent for correct actor-action-object production	Clinician asks parent to hold stimulus training material. Clinician delivers leader phrase, "What is Allen doing?" Clinician and parent deliver social praise for correct response.	Per cent of correct responses

Case Study

C.J. is a five year old girl. She has been diagnosed to have spastic diplegia cerebral palsy. Following initial evaluation, she entered the early education program.

She was involved in the early education class, physical and occupational therapies and the speech pathology department.

A diagnostic evaluation, completed in speech pathology when she was two, indicated C.J. had measurably low vocal frequency and diversity. She mainly produced vowel sounds.

A Receptive-Expressive Emergent Language Scale test was administered. Information provided by C.J.'s mother showed a receptive language age of 12 months and an expressive language age of six months.

The peripheral oral mechanism was satisfactory. However, there appeared to be poor labial and lingual coordination with little specificity of movement.

Hearing was within normal limits according to observation audiometry.

C.J. appeared to be a passive child. She did not interact either vocally or socially with her mother or others. She was diagnosed as severely delayed in speech and language development, related to general motor impairment. Prognosis was guarded.

Program recommendations included speech stimulation, parent training to supplement training programs in the home and receptive language stimulation.

C.J.'s first training program was the *Speech Stimulation Program*, described earlier. Her goal was to increase vocal frequency and diversity. These are necessary prerequisites for sound chaining and word approximation in language learning.

Portions of the program were ad-

ministered at home while others were administered at the early education center. C.J.'s mother presented the program competently.

Vocal frequency increased after one year of the program, according to collected data. However, no change could be observed in vocal diversity, and the program was discontinued.

During the following year, programs were implemented to establish "instruction following" and receptive language skills. Generally, the programs were successful and gains were seen in these areas. But, no change was observed in expressive sound or language responding.

Several months later, a long range program was established considering the following factors: C.J. was able to follow basic instructions, to maintain eye contact for short periods of time and to exhibit adequate pointing response, as well as an adequate range of motion in pointing.

In addition, C.J.'s parents cooperated well in home programs. Other factors considered were that C.J. did not show any increase in speech and sound development, and she did not appear highly motivated to communicate.

Accordingly, the clinician planned a training program to see if C.J. could differentiate between pictures of objects and actual objects, using a pointing response.

A language picture board was used. Through this alternate form of communication, skills which are prerequisite for expressive communication could be established.

Here is how the training program was designed:

Objective: After 30 training sessions, C.J. will be able to point correctly to 10 photographs presented in pairs at random. She will do so with 90 per cent accuracy on two consecutive blocks of 10 trials. This will be in response to the clinician's instructions as evaluated and recorded by the clinician.

Procedure: Training stimuli used were objects and photographs of 10 functional objects and people familiar to C.J.

The photos were placed in one of three plastic pockets on a masonite lap tray. The tray is adaptable to her wheelchair. A strip of red tape was placed on C.J.'s pointing finger. A cardboard figure representing the shape of her hand was placed appropriately (for her) at the center of the lap tray. This was termed the "start position."

She was instructed to begin and end all responses from that position on the board.

A basic conditioning procedure was used to establish the target behavior. The clinician presented the stimulus phrase containing the instruction with the object and/or photograph to evoke the response.

The clinician evaluated the response, provided the consequences for the response, recorded the response and selected the next training stimulus.

The trainer correction model was employed when C.J. did not respond or responded incorrectly. Reinforcement was presented on a continuous schedule. It consisted of hearty social praise paired with bits of edibles or with giving C.J. the toy which was used in training.

The following strategy was designed to establish the target behavior:

(B1) Baseline will be collected on the target behavior. C.J. will be asked to point to 10 photographs when presented in randomized pairs.

Discriminating training with photo and object using masonite lap tray.

(T1) The first training step (T1) will occur as the clinician presents a cracker with a photo of a cracker accompanied by the instruction: "C.J., point to cracker." C.J. will be reinforced for correctly pointing to the object/photo pair. Criterion is 90 per cent accuracy on two consecutive blocks of 10 responses.

(T2) The clinician will present a cup and a photo of a cup with the instruction. C.J. is reinforced for correctly pointing to the object/photo pair. Criterion is 90 per cent accuracy on two consecutive blocks of 10 responses.

(T3) The clinician will present both objects and photos of both a cup and a cracker with the instruction to point to one of the pairs. C.J. is reinforced for correctly pointing to the desired pair. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.

(T4) The clinician will present photos of a cup and a cracker, fading the presentation of the objects, with the instruction to point to the photo of a cup (or a cracker). C.J. is reinforced for correctly pointing to the desired photo. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.

(T5) The clinician will present a toy and a photo of the toy with the instruction. C.J. is reinforced for correctly pointing to the desired photo. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.

(T6) The clinician will present a doll and a photo of a doll with the instruction. C.J. is reinforced for correctly pointing to the object/photo pair. Criterion is 90 per cent accuracy on two consecutive blocks of 10 responses.

(T7) The clinician will present objects and photos of a toy and a doll with the instruction to point to the desired object/photo pair. C.J. is reinforced for correctly pointing to the desired pair. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.

(T8) The clinician will present photos of a toy and a doll, fading the presentation of the objects, with the instruction to point to the desired photo. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.

(T9) The clinician will present, in random order, photos of a cup, a cracker, a toy and a doll with the instruction to point to one photo. C.J. is reinforced for correctly pointing to the desired photo. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.

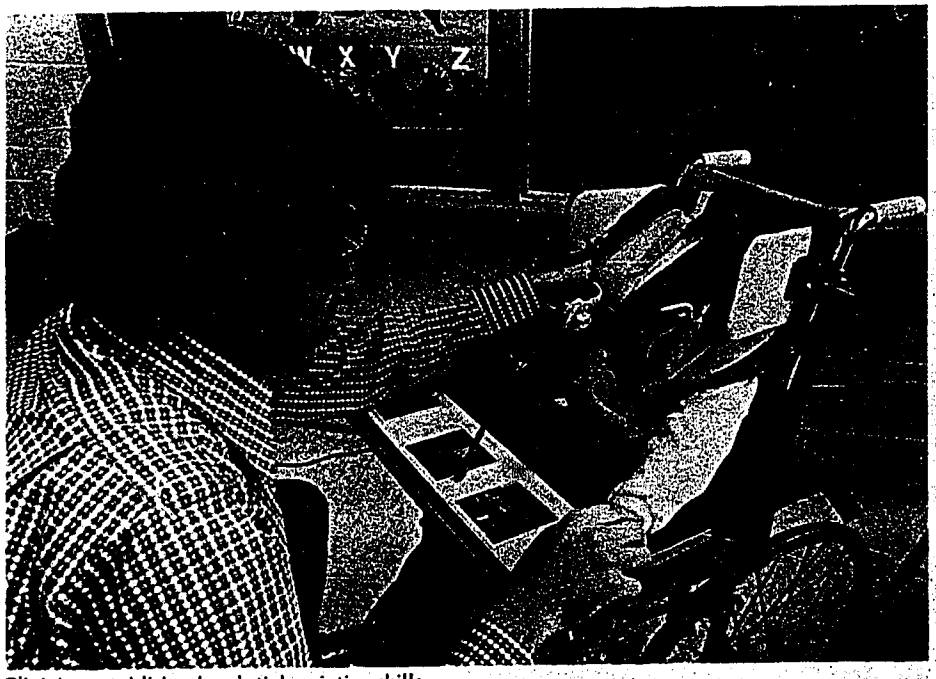
(T10) The clinician will present a photo of 'mommy' with the mother present in the setting with the instruction. C.J. is reinforced for correctly pointing to the mother/photo pair. Criterion is 90 per cent accuracy on two consecutive blocks of 10 responses.

(T11) The clinician will present a photo of C.J. with the instruction. C.J. is reinforced for pointing to herself/photo pair. Criterion is 90 per cent accuracy for two consecutive blocks of 10 responses.

(T12) The clinician will present photos of 'mommy' and C.J. with the instruction. C.J. is reinforced for correctly pointing to the desired photo/object pair. Criterion is 90 per cent accuracy on two consecutive blocks of 10 responses.

(T13) The clinician will present photos of 'mommy' and C.J., fading the presence of pairing the photo with the person, with the instruction. C.J. is reinforced for correctly pointing to the desired photo. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.

(T14) The clinician will present, in random pairs, photos of a cup, a cracker, a toy, a doll, 'mommy' and C.J. with the instruction. C.J. is reinforced for correctly pointing to the desired photo. Criterion is 90 per cent accuracy on three consecutive blocks of 10 responses.



Clinician establishes head stick pointing skills.

(T15) The remaining stimulus items, consisting of objects and their photographs, will be trained by the mother at home in a similar training manner. The training stimulus items will be photographs of the family car, the school, C.J.'s father and C.J.'s brother.

(B2) Baseline will be collected on the target behavior.

Results: The following results were obtained after approximately twenty-eight, 20-minute training sessions. Baseline (B1) collected on the target behavior revealed that C.J. did not point correctly with any degree of accuracy.

Criterion was reached for (T1) after six training sessions. The response rate ranged from 40 to 100 per cent.

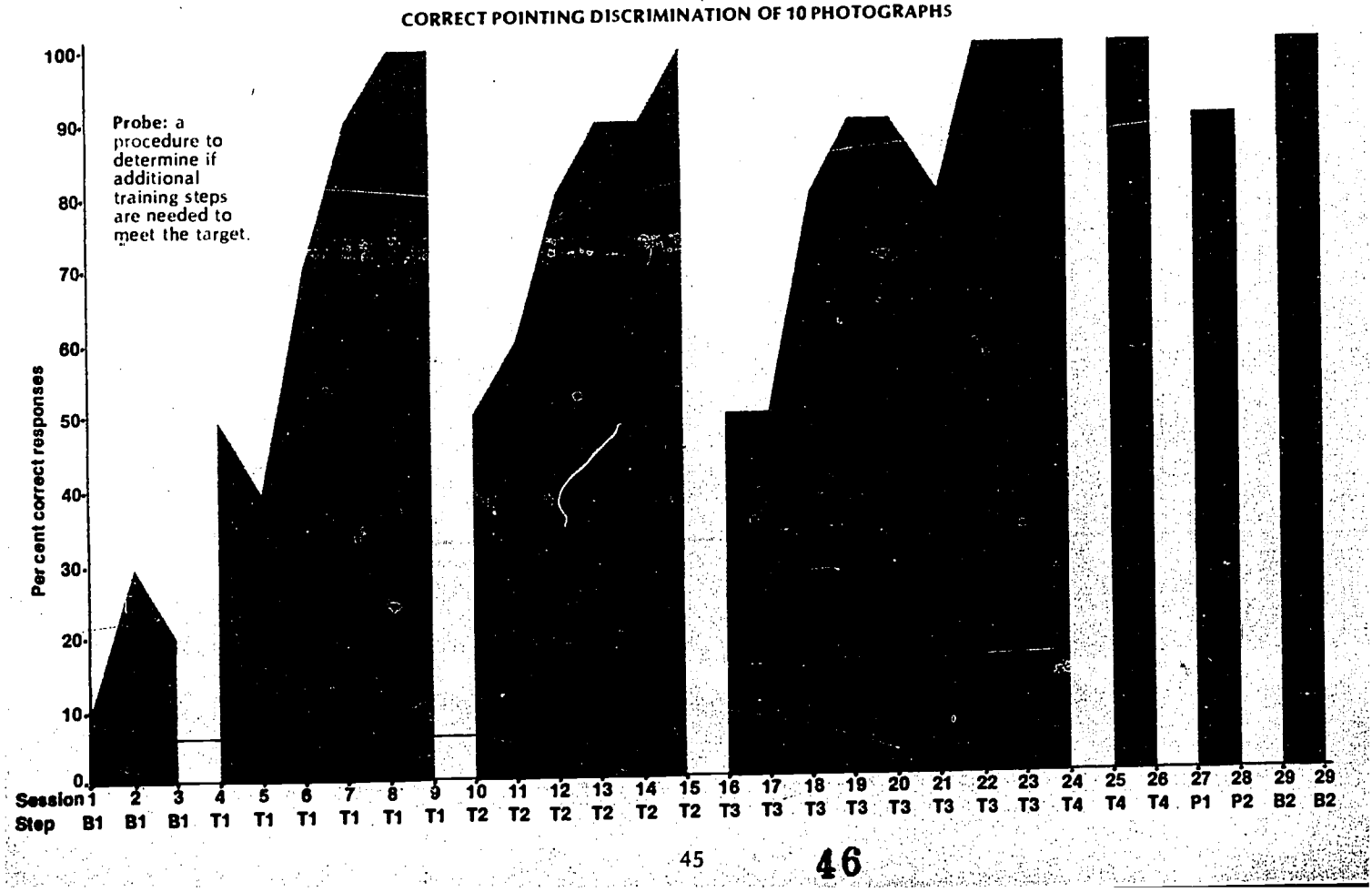
Criterion was reached for (T2) after six training sessions. C.J. reached criterion for (T3) in nine sessions and for (T4) in two sessions.

At that point, the clinician probed for pointing ability with the presentation of two pictures for the remaining photograph training items. C.J. performed with 90 per cent accuracy for the random presentation of the photos.

The final baseline (B2) was collected, and C.J. correctly pointed with 100 per cent accuracy to all photographs. The training objective was reached after 25 training sessions.

The results of this program revealed the following: C.J. appeared to exhibit receptive language for all training objects used. But, she needed to learn to differentiate the object from the picture of the object and/or to consistently use finger pointing as a response mode.

Additionally, the probe, instituted after training four steps in the program, showed no need for further training. This allowed the clinician to plan another program in the sequence of developing a picture language board.



Social services are available to the child and his or her family through an early education social worker.

The social worker initiates and processes applications for services, schedules evaluations, coordinates treatment programs and serves as the treatment team facilitator. She also provides ongoing parent counseling and, with the director, plans various parent meetings and social events during the year.

The social worker's job begins with the child's referral. Parents are contacted by telephone, and an evaluation interview is scheduled.

During the interview, parents are informed about The Capper Foundation's Early Education Project, what they can expect of the agency, and what the agency expects of them. In addition, the social worker gathers as much information as possible about the child and his or her family.

A prepared interview format is used to insure that all necessary information is obtained. (See Appendix A.) This includes background information, family assessment, the child's developmental and medical history and present ability to function.

With these data, the social worker can better understand the family's strengths and weaknesses and its ability to cope with the child's problems. This information is shared with staff members who work with the family.

The evaluation interview establishes rapport between the family and the social worker. During the evaluation period and treatment process, parents can turn to the social worker to share concerns and ask questions.

Following the evaluation interview, the social worker collects pertinent information about the child from

such sources as doctors and psychologists. These reports become a part of the child's permanent chart. The evaluation period concludes with formal reports from each department. Reports are discussed and recommendations are made for the child's future treatment.

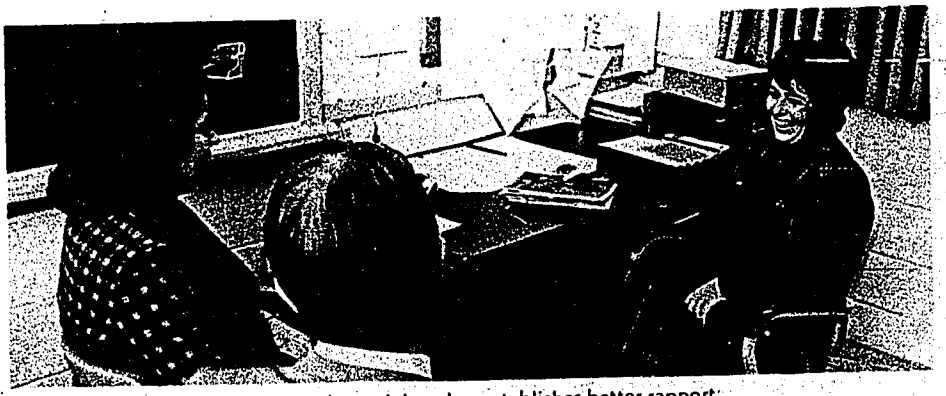
Should the child qualify for enrollment, the social worker remains available to assist parents. However, if the staff believes the child cannot benefit from treatment services, the social worker helps the family locate more appropriate treatment at another agency.

Before a referral is made, careful consideration is given to the family's readiness and ability to act on the referral. In addition, services offered by the agency being considered also are examined, along with its fees, policies and admission requirements.

In certain instances, the social worker refers an enrolled child to another agency for supplemental services not provided by The Capper Foundation. For example, if the child has specific behavior problems, behavioral psychologists and psychiatric social workers might be consulted. In other cases, for example, help is sought from the State Department of Services to the Blind or volunteer organizations.

Should their services be needed, the social worker maintains contact with groups such as Social and Rehabilitation Services, the Family Guidance Clinic and the Department of Maternal and Child Health. These, as well as other community groups and health professionals, are kept informed of services offered by the early education project.

At least every six months during the treatment program, the staff meets to review the child's progress. Prior to the meeting, the social worker consults with parents to find out their concerns about the child's behavior and performance. Parental attitudes which may affect the child's performance also are assessed.



Through interviews with parents, the social worker establishes better rapport.

At the meeting, the team discusses the child's treatment program and behavior, and program modifications are recommended. Through this joint effort, success is assured in the team approach to treatment.

After the meeting, the social worker prepares a written report and distributes it to the staff and others, such as the child's pediatrician.

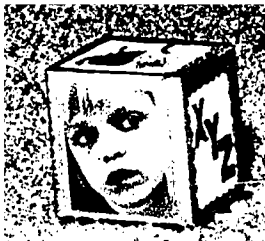
Then a follow-up meeting is scheduled for parents to familiarize them with various treatment methods and to inform them of their child's responses. The social worker answers questions parents raised in the first meeting and seeks the parents' help in problem areas pointed out by the staff, such as toilet training, attendance and development of self-help skills.

Counseling skills are employed by the social worker to help parents verbalize their feelings toward their child and to arrive at a realistic understanding of the child's abilities and limitations.

An attempt is made to create a warm and accepting environment during the social worker's discussions with parents. This helps encourage parents to express themselves in an open and frank manner. It is extremely important for the social worker to maintain rapport and not jeopardize her relationship with the family.

Social Worker Jimmilee Prouty consults with Maria Miller, secretary.

The social worker also plans most of the agenda for weekly team meetings. Here, discussion may focus on a particular child, policy changes, schedule revisions or clarification of goals. These topics also may be discussed informally between staff members and the social worker.



Case Study Of Pete

Peter Y was treated for three years in the early education program.

His progress is dramatic proof of what early intervention can do.

The following case study demonstrates the team approach to evaluation, treatment and measurement techniques.

EVALUATION INTERVIEW

Date: 10-1-72

Name: Peter Y
Birthdate: 7-4-70
Sex: Male

Background Information

Attending Physician: Dr. P
Diagnosis: Psychomotor retardation due to birth anoxia associated with prematurity
Persons Interviewed: Mrs. Y, Peter's mother. Peter accompanied his mother for the interview.

Purpose of Interview: To give the mother information about The Capper Foundation, to gain an idea of the child's home environment and life style and to take a complete developmental history which will be of assistance to the staff as it begins its evaluation of Peter.

Source of Referral: Peter was referred to this agency by a public health nurse who works in a community mental health center. The public health nurse stated that the family came to the attention of the center when Mrs. Y sought help in improving her relationship with her son.

Reason for Referral: The public health nurse recommended that Mrs. Y look into the new early education program at The Capper Foundation, as both preschool and therapies seemed appropriate for Peter.

Parents' Statement of The Problem: Mrs. Y brought along a list of her concerns about Peter which read, (1) left knee appears weak, (2) spine seems curved, (3) left hand and arm seem abnormal, (4) problems with his eyes, (5) head banging seems enjoyable to him, (6) seems to have muscle spasms, (7) unable to sit alone for more than a few seconds, (8) does not talk at all, (9) temper tantrums.

Other Problem Solving Efforts Made: Peter has been followed closely by his local pediatrician who referred him to The Menninger Foundation for a complete neurological evaluation and a speech and hearing evaluation. Copies of those reports are filed in his chart. In April, Mrs. Y sought help at the community mental health center. She now sees a psychiatrist weekly. Peter presently attends that agency's day care center five days a week while his mother works. During this time, his behavior has been observed by that staff and a program for improvement has been started.

Parents' Expectations of This Agency: Mrs. Y had very little information about the program at The Capper Foundation. The early childhood project was explained to her in detail. Mrs. Y hopes that through involvement in the early education program, Peter will learn to sit and eventually to walk, and that she can receive guidance in the areas of dealing with Peter's temper tantrums and refusal to eat, and in undertaking a toilet training program for Peter.

Family History and Interaction

Mother's Name: Mrs. Y
Birthdate: March 25, 1949
Highest Grade Completed: 12
Occupation Before Marriage: Student
Present Occupation: Cleaning lady in a large office building
Mrs. Y is attractive and well groomed. However, she is extremely withdrawn. This interview seemed to be a very painful experience for her, and she kept her head down and seldom looked up, even to answer questions.

Father's Name: Mr. Y
Birthdate: January 2, 1947
Highest Grade Completed: 12
Occupation: Unknown
Mr. Y deserted Mrs. Y shortly before Mrs. Y discovered she was pregnant. He is not aware of Peter's existence.

Status of Parents: Mother and father are both living. They are divorced, and there has been no communication between them since before Peter's birth.

Others Living in Home: None

Family History of Disability: None

Family Attitude Toward Child: Shortly after Peter's birth, Mrs. Y was hospitalized and Peter was placed in a foster home. He remained there for nearly one year. When Mrs. Y assumed responsibility for her son's care, she was not informed of developmental problems already evident. This lack of communication, coupled with later accusations directed toward Mrs. Y's mothering abilities, has contributed to Mrs. Y's poor self concept and her feelings of inadequacy as a parent.

Classroom Assistant Felipa Blanco is one of the many dedicated people in the Early Education Project.

Mrs. Y continues to work full-time but anticipates quitting if she's eligible for ADC (Aid to Dependent Children). She has already submitted an application for financial assistance through the welfare department.

During the interview, Mrs. Y stated several times that she felt unable to relate to Peter. She feels that because she missed out on his infancy, she has had trouble accepting him. Peter's inability to do physical activities which are normally expected for a child his age frustrates and angers her. She does not know how to cope with Peter's behavior.

When asked what behaviors concerned her the most, Mrs. Y stated that Peter has frequent temper tantrums. Mrs. Y described the tantrums as occurring most often at meal times. During tantrums, Peter screams, rolls his head from side to side, throws things, bangs his head, holds his breath and becomes very red in the face.

Mrs. Y said that her usual method of handling this situation is to ignore Peter and then to try feeding again. She said that there were really no other issues between them because, in general, Peter did not interact with people or things.

Peter's presence during this interview provided some chance for observation of mother and child together. Mrs. Y's awareness of Peter during the interview was confined to negative interaction which was expressed either through scolding him in a very harsh voice or through slapping him lightly on the leg to make him stop fidgeting. Generally, Peter seemed oblivious to this. When offered a brightly colored squeeze toy, Peter looked at it but did not attempt to reach for it. He did not respond socially to this worker when his name was called.

Pregnancy, Labor and Delivery: Mrs. Y described her pregnancy as normal except for some spotting at about three months. She said that during her pregnancy, she continued working as a cleaning lady, which involved reaching, bending and lifting, and she wonders if this strain could have caused Peter's disabilities. She said that Peter was born prematurely at seven months and weighed only 3 pounds, 4 ounces. She described her labor as "long and hard" and lasting about 19 hours. She had medication twice during labor, and gas was administered for delivery. The baby's head presented first, and forceps were used.

Developmental Data: Because Mrs. Y was not caring for her child during his infancy, it was extremely difficult for her to give a concise developmental history. She did give the following information, but was unsure of many of her answers.

Babbling—5 or 6 months.

Held head up when prone—2 or 3 months

Moved hands purposefully—5 months

Rolled over—19 months

Sat up without support—He does not do this.

Crawled—At 20 months, he began to scoot with trunk and legs on the floor, using his elbows to pull. He does not bear weight or pull to stand.

Words—Recently, Peter has begun to say "mama," and he babbles frequently.

Social Development: Peter's favorite toys are balls and cars. He spends most of his day lying on the floor or in the infant seat. Peter is with other children at the day care center but doesn't seem to acknowledge their presence, according to Mrs. Y. He does recognize his mother and becomes very upset when approached by a stranger. When held by this interviewer, he reached for his mother.

Social worker Jimmilee Prouty consulted with Mrs Y during her initial interview at The Capper Foundation.

Present Functioning

Sleep Habits: Peter does not sleep through the night uninterruptedly. He wakes at 2:30 a.m. and cries. He is usually comforted by a drink of water. Mrs. Y said that it seems to be difficult for Peter to fall asleep. He has no regular naptimes during the day, but sleeps intermittently.

Therapist demonstrates heel cord stretching techniques.

Feeding: Peter is now learning to feed himself a cracker. During mealtimes, Mrs. Y feeds him and holds his cup. She feels that he should be learning these skills, but she is reluctant to begin teaching him because she doesn't know the proper procedures, and also because she dreads the messiness.

Toilet Training: Peter is not toilet trained, and Mrs. Y again expressed her feelings of inadequacy in knowing how to begin.

Assistive Devices: Peter does not have braces, canes or crutches. He does not have a wheelchair. He is receiving aid from the Kansas Commission for Crippled Children.

Medications: None
Home Exercise Program: Mrs. Y has been shown exercises to stretch Peter's tight heelcords
Precautions: None

Summary and Recommendations

Peter is 2 years, 3 months old. He lives with his mother, who is divorced, and has no brothers or sisters. Peter's mother works full-time, and Peter is left in the day-care center sponsored by the Community Mental Health Association. Peter's diagnosis is psychomotor retardation as a result of birth anoxia. He does not sit up without support and has only recently learned to scoot himself across the floor, using his elbows. He cannot bear weight on his lower extremities. He has no self-help skills and does not communicate through speech. It appears that Peter would be a good candidate for the early childhood project.

Mrs. Y seems to need a great deal of guidance in child-rearing and behavior management. Involvement in Peter's treatment program would be beneficial to her. It may be difficult to involve Mrs. Y in the parent program, because she is extremely withdrawn. However, participation in a small discussion group might be very beneficial and would perhaps give her some confidence to participate in other aspects of the parent program.

Submitted by,
Early Education Social Worker

Therapists instruct mother on proper dressing procedures.

Evaluation Staffing

Name: Peter Y
Birthdate: 7-4-70
Date: 10-19-72

In Attendance: The Early Education Treatment Team.

Purpose: To report evaluation findings by each department and to determine whether Peter's needs can be adequately met by this agency. Also, to plan a treatment program to meet Peter's individual needs or to make recommendations for a more appropriate placement, if indicated.

Background Information: Peter is 2 years, 3½ months old. He lives with his mother, who is divorced. He has no brothers or sisters. Peter's mother works full-time, and Peter attends a day-care center sponsored by the Community Mental Health Association. A public health nurse at that agency referred Peter to The Capper Foundation. Peter's diagnosis is pyschomotor retardation due to birth anoxia associated with prematurity. He is treated by Dr. P, pediatrician, and had had a neurological and speech evaluation at the Menninger Foundation. This staffing concludes a two-week evaluation period by all departments.

THE CAPPER FOUNDATION FOR CRIPPLED CHILDREN

Reflex Developmental Evaluation Form

Name Peter Y
Birth Date 7-4-70 Age 2yr 4mo Sex Male
Diagnosis Cerebral Palsy

Referring Service/Clinic _____
Physician _____
Examiner _____

Scoring: - absence of a response or finding
+ presence of a response or finding
Y - asymmetrical response or findings
L - left F - forwards
R - right B - backwards

ITEM	AGE SPAN ONSET	AGE SPAN FADES	DATE L	DATE R	DATE F	DATE B	DATE L	DATE R	DATE F	DATE B	DATE L	DATE R	DATE F	DATE B	REFLEX	COMMENTS
1.	Birth	1-2 mos.	-	-											Crossed extension	
2.	Birth	1-2 mos.	+	+											Flexor withdrawal	
3.	Birth	1-2 mos.	-	-											Positive support (neonatal type)	
4.	Birth	2 mos.	-	-											Ankle Clonus, 8-10 beats	
5.	Birth	2 mos.	+	+											Spontaneous stepping	
6.	Birth	2 mos.	-	+											Placing reaction (Proprioceptive (arms))	ASYMMETRICAL
7.	Birth	2 mos.	-	+											Placing Reaction (Proprioceptive (legs))	ASYMMETRICAL
8.	Birth	4-5 mos.	-	-											Palmar grasp	
9.	Birth	6 mos.	-	-											Moro (30° headdrop)	
10.	Birth	9-10 mos.	-	-											Plantar grasp	
11.	Birth	18 mos.	-	-											Extensor plantar response	
12.	0-2 mos.	4-5 mos.	-	-											Asymmetric TNR	
13.	1-2 mos. (1-6 mos.)	Inhibited (2 yrs.)	-	-	-	-									Labyrinthine neck righting reflex	
14.	3 mos.	12-24 mos.			+	+									Landau	LE SPASTICITY
15.	4-5 mos.	Persists	+	+											Placing reaction (visual and tactile (arms))	
16.	4-5 mos.	Persists	+	+											Placing reaction (visual and tactile (legs))	
17.	4-6 mos.	Inhibited (5 yrs.)	-	-											Neck righting on body	
18.	4-6 mos.	Inhibited (5 yrs.)	-	-											Body righting on body	
19.	5 mos.	Persists	-	-	-	-									Tilting reaction prone	
20.	6 mos.	Persists													Positive support weight bearing	LE SPASTICITY
21.	6 mos.	Persists	-	-	-	-									Protective extension of arms sideways	
22.	7 mos.	Persists	-	-											Tilting reaction supine	
23.	7-8 mos.	Persists													Tilting reaction sitting	NOT TESTED - NOT ABLE TO ASSUME
24.	8-9 mos.	Variable	-	-											Protective extension of arms forward (Parachute reaction)	
25.	9 mos.	Persists	-	-											Protective extension of arms backwards	
26.	9-12 mos.	Persists													Tilting reaction-all fours	NOT TESTED NOT ABLE TO ASSUME
27.	12-21 mos.	Persists													Tilting reaction standing	NOT TESTED NOT ABLE TO ASSUME
28.	15-18 mos.	Persists													Staggering (protective) reactions	NOT TESTED NOT ABLE TO ASSUME
					+	+									Symmetrical tonic neck reflex	
					-	-									Tonic labyrinthine reflex	
			+	+											Associated motions	

DDDL-UNC--P.T. Experimental Evaluation Device 1968; Revised Oct. 1969 DDDL-UNC
Revised Feb. 1973 CRU-KU; Revised May, 1975 Capper Foundation

DEPARTMENTAL REPORTS

Physical and Occupational Therapies

Peter was evaluated by the occupational and physical therapists in three sessions. A reflex text was administered with the following abnormal reflexes found:

1. positive flexor withdrawal
2. positive associated reactions
3. positive spontaneous stepping
4. positive symmetrical tonic neck

These reflexes were found to be absent:

1. neck righting
2. body righting
3. equilibrium reactions in prone and supine
4. protective extension sideways, backwards and forwards

Peter appears to be functioning at a six-month level in gross motor skills. Peter has good head control when pulled to sit and when supported in sitting. He is able to pivot while prone on elbows and to roll from prone to supine.

Peter seems to be at a seven-month level in fine motor skills. He is able to reach for a toy and push it, put his hands together and track moving objects through 180 degrees.

Moderate flexor spasticity is present in Peter's upper extremities. His arms are held in a pattern of shoulder internal rotation, elbow flexion and pronation and wrist flexion. Extensor spasticity dominates the lower extremities. His hips are internally rotated and adducted, and his feet are held in plantar flexion.

Full range of motion can be achieved passively through slow movements, even though it is actively limited by spasticity.

Peter's crying behavior and frequent head banging interfered with further evaluation attempts.

Recommendations include occupational therapy for improvement of upper extremity function, development of grasp-release, training in self-feeding and self-dressing skills and exercises to maintain full range of motion.

Physical therapy will focus on developmental training with emphasis on rolling, sitting balance and achieving all-fours position. Reflex training to inhibit abnormal reflexes and facilitate development of normal reflexes should be included in the program.

Physical Therapist
Occupational Therapist

Speech Pathology

Peter was seen in this department when he was two years, three months old. His mother's major concern was that Peter was not talking as he should at his age.

During the test, Peter babbled and cried frequently. Toy objects were selected in relation to developmental sound production to elicit speech samples. He would not consistently imitate the stimuli provided by the examiner. He exhibited babbling responses including several sounds such as /p/, /b/, /m/, /t/, /d/, /n/, /s/, /k/ and /g/. Vowel sound production was judged satisfactory in isolated word production and word attempts. Speech sound production appeared satisfactory for his chronological age.

The *Verbal Language Development Scale* was given with the mother as the informant. Peter exhibited those behaviors appropriate for a language age of approximately one year. Generally, Peter is able to identify family members and knows more than three words. But he is not able to combine two words, imitate speech sounds or follow two or three directions given in sequence.

Motor and vocal imitation trials revealed a low rate of appropriate responding and 30 per cent correct responses, respectively. Crying and inappropriate attending behavior appeared to depress his performance.

An oral inspection revealed whitish patches and line configurations on the surface of the tongue. But these do not appear to affect sound production. The teeth are clean and in good condition. While other observations were not possible, it appears that Peter has the proper oral structure and function for speech.

A hearing evaluation was not made. However, in a previous test conducted elsewhere, Peter was evaluated using respiration audiometry because of concern for inadequate speech development. While a mild hearing loss was found in the right ear, none was found for the left ear for frequencies tested. Results indicated that he had satisfactory hearing sensitivity for those pure tones tested, and that the hearing loss would not affect speech development.

Summary and Recommendations: Peter's speech evaluation indicates that sound production is mainly in the form of babbling, but vocal diversity is appropriate for his chronological age. Language development appears delayed by at least one year. He shows noticeable delay in those language skills normally exhibited by a two-year-old. He shows a low rate of appropriate motor and vocal imitative behavior. Inappropriate attending and crying behavior make a more accurate index of his performance impossible.

Oral examination reveals satisfactory structure and function for speech. While a slight hearing loss is present, his hearing sensitivity is satisfactory. Peter appears to be a candidate for the early education program. It is recommended that he have remedial speech and language

training with the following goals: (1) increase appropriate instruction following behavior; (2) increase appropriate imitative vocal responding; (3) increase connected speech responding; (4) provide the mother with suggestions to stimulate and reinforce language production. The prognosis for Peter appears good, with the help of a consistent remedial program in this department and the early education classroom.

Speech Pathologist

Class

During classroom sessions, Peter did not attempt to scoot or crawl. He preferred to stay on his stomach and did little of his own volition. He showed interest in a doll house in which play consisted of pulling a lever to make the doorbell ring.

Peter did not participate during group, music, art or story time. Responses consisted of crying and banging his head, or passively consoling himself by rocking back and forth. He could not be coaxed to look at the teacher or to become involved in nursery games such as pat-a-cake and ball playing.

Peter would not initiate or imitate words. Consequently, his level of achievement in language could not be determined.

It's concluded that due to extensive negativism exhibited through crying behavior and unresponsiveness, accurate assessment of Peter's performance level on cognitive and social skills cannot be made at this time.

It is recommended that Peter attend preschool classes four days a week. A program to modify his inappropriate behavior of crying and head banging will be planned.

Early Education Teacher

Summary and Recommendations

Peter's crying behavior hindered evaluation in all departments. He was evaluated jointly by the physical and occupational therapists. Several abnormal reflexes were found, and several reflexes normally present were absent. He appears to be functioning at a six-month level in gross motor skills and at a seven-month level in fine motor skills.

Evaluation in speech pathology indicates that Peter's language development is delayed at least one year. Speech sound production was mainly in the form of babbling, but vocal diversity is normal for his age.

It is recommended that Peter be enrolled in the preschool for four half-day sessions a week. Peter's first goal will be behavior management to control inappropriate crying behavior. In addition, he'll be encouraged to interact with the environment and other people.

A program will be planned with the assistance of the behavioral psychologist consultant and will be coordinated by all departments.

Peter will be seen three times a week in occupational therapy, with emphasis on improvement of upper extremity function, development of grasp-release, training in self-feeding and self-dressing skills and exercises to maintain full range of motion.

It is recommended that he be seen three times a week in physical therapy for developmental and reflex training to inhibit abnormal reflexes and develop normal reflexes.

It is also recommended that Peter receive remedial speech and language training in speech pathology.

Since Mrs. Y lacks confidence in her role as a mother, she will need a great deal of support and encouragement from the staff. Accordingly, the social worker will plan a home visit to increase rapport with Mrs. Y and to encourage her to participate in the parent program.

Each department will coordinate its activities with Mrs. Y so she can extend Peter's therapy at home. Individual counseling sessions will be scheduled regularly with Mrs. Y to assist her in understanding principles of behavior management and to help her build self-confidence.

Early Education Social Worker

Staffing Report

Name: Peter Y
Birthdate: 7-4-70
Date: 6-27-73

In Attendance: The Early Education Treatment Team

Purpose: To evaluate the child's progress in the total treatment program and to discuss future treatment goals and recommendations.

Background Information: Peter is two years, 11 months old. His diagnosis was changed in the clinic this month by Dr. Z, who classified him as cerebral palsied. Peter has been enrolled in the early education program since October, 1972. He is attending preschool four half-day sessions a week and is seen regularly in occupational and physical therapy as well as speech pathology. Mrs. Y is no longer working outside the home and has more time to devote to Peter.

DEPARTMENTAL REPORTS

Physical Therapy

Peter has been seen three times a week in physical therapy. He has made measurable gains in gross motor skills and in his behavior. He no longer cries throughout the session and is generally cooperative. Infrequently, his behavior interferes with the planned activities.

Peter rolls nonsegmentally from prone to supine and supine to prone. He crawls in the prone position by pulling forward on his elbows, balances momentarily in a tailor sitting position, holds an all-fours position independently and supports his weight in standing while in the parallel bars. He cannot take steps forward at this time.

Short leg braces with medial T-straps were ordered at the January Orthopedic Clinic. These seem to control the spasticity in the heelcords when Peter is standing. However, he has not yet adjusted to them fully.

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Physical Therapist

Occupational Therapy

Peter has been seen three times weekly in occupational therapy since October. He has adjusted to the program, and crying behavior has decreased. Peter is now cooperative and will do most activities. However, he still resists activities he's unfamiliar with and has a low frustration tolerance.

Therapy has been administered to reduce flexor spasticity and to improve gross motor function in the upper extremities. Peter can now reach to within 15 degrees elbow extension with the shoulder internally rotated. Elbow pronation is reduced somewhat. Graded activities to improve fine motor upper extremity function will be started.

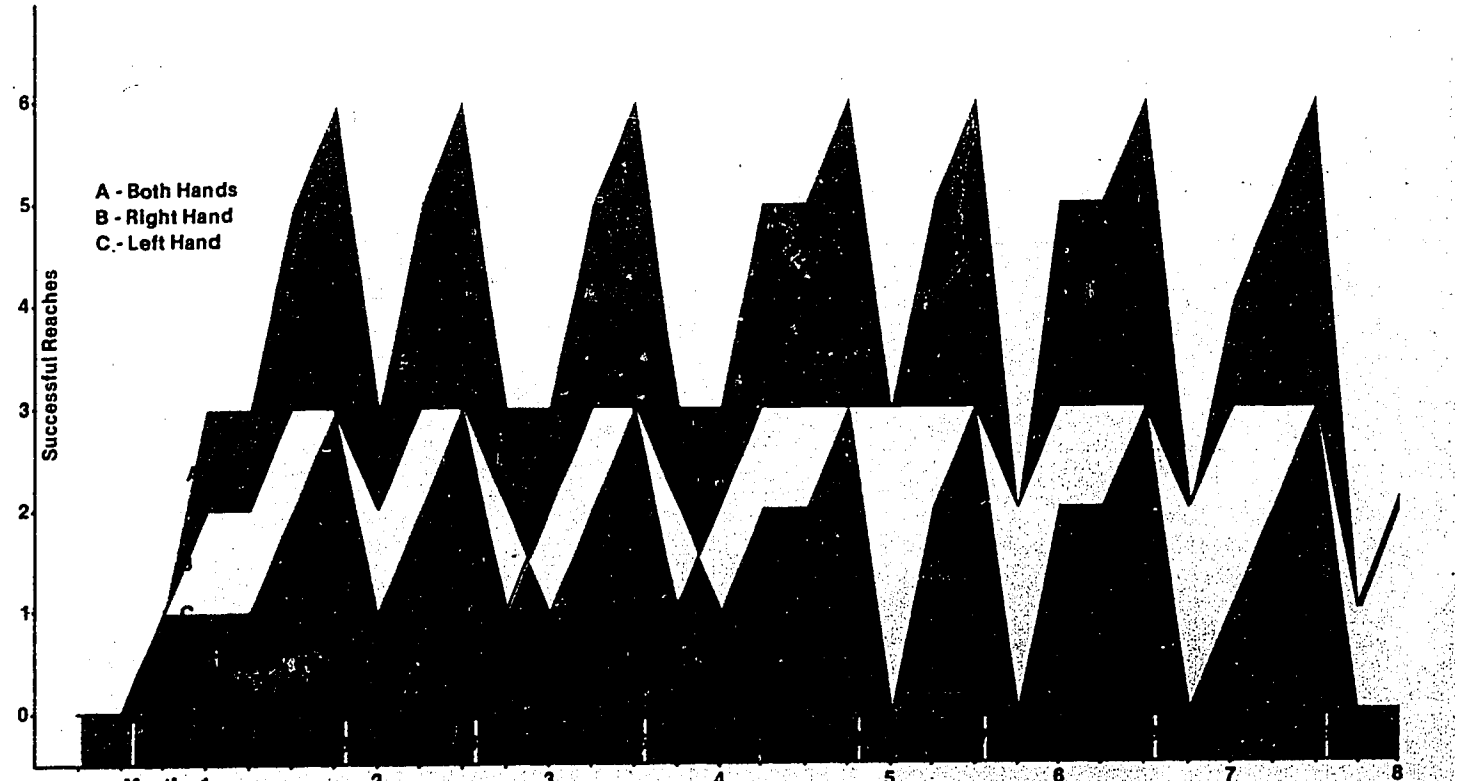
Because of continued shoulder internal rotation, forearm pronation, Peter still has difficulty feeding himself with a spoon and holding a cup. He is beginning to use finger foods, and this activity reinforces better upper extremity movement patterns. Feeding has been a problem in the home because of difficulty in positioning Peter. A small high-backed chair with arms has been loaned to his mother. This gives him support so he can sit at the table with his family.

Peter's poor sitting balance and lower extremity spasticity hinders independent self-dressing. It is believed that work in these areas should be deferred until Peter develops more trunk strength and better sitting balance.

It is recommended that Peter continue the same type of program in occupational therapy.

Occupational Therapist

MEASUREMENT: Place Peter prone over the roll. Stabilize one arm to the roll for the measurement. Baseline: Place a toy 12 inches away. The toy should be one which can be hit rather than manipulated (e.g., stacked blocks). Ask Peter to hit the toy. If he cannot, reduce the distance of the toy to two inches. Give Peter three tries with each arm and record a success (+) or failure (-). When all six tries are (+), indicating that he was able to reach the toy on all six tries, move the toy one-inch farther away. When the toy is 12 inches away, Peter's arms will be at 180 degree extension. Peter is given one piece of cereal for each successful reach.



Speech Pathology

The objective after 40 training sessions was for Peter to respond verbally to 10 words, with 90 per cent accuracy in three consecutive blocks. The responses were analyzed and graphed by the clinician.

The procedure was to collect a baseline on the entire behavior.

Condition 1: (A) Peter was reinforced each time he looked at the clinician.

(B) He was reinforced each time he looked at the clinician following the stimulus, "Peter, look at me."

Condition 2: (A) He was reinforced each time he looked at one picture following the stimulus, "Peter, look at the (clown)."

(B) He was reinforced for looking at each of 10 pictures following the stimulus, "Peter, look at the . . . (picture)."

Condition 3: Peter was reinforced for pointing to each of the pictures following the stimulus, "Peter, point to the . . ." Pointing was established through a shaping procedure.

Condition 4: (A) He was reinforced for imitating the clinician's model in response to, "This is a . . ., Peter, what is this?"

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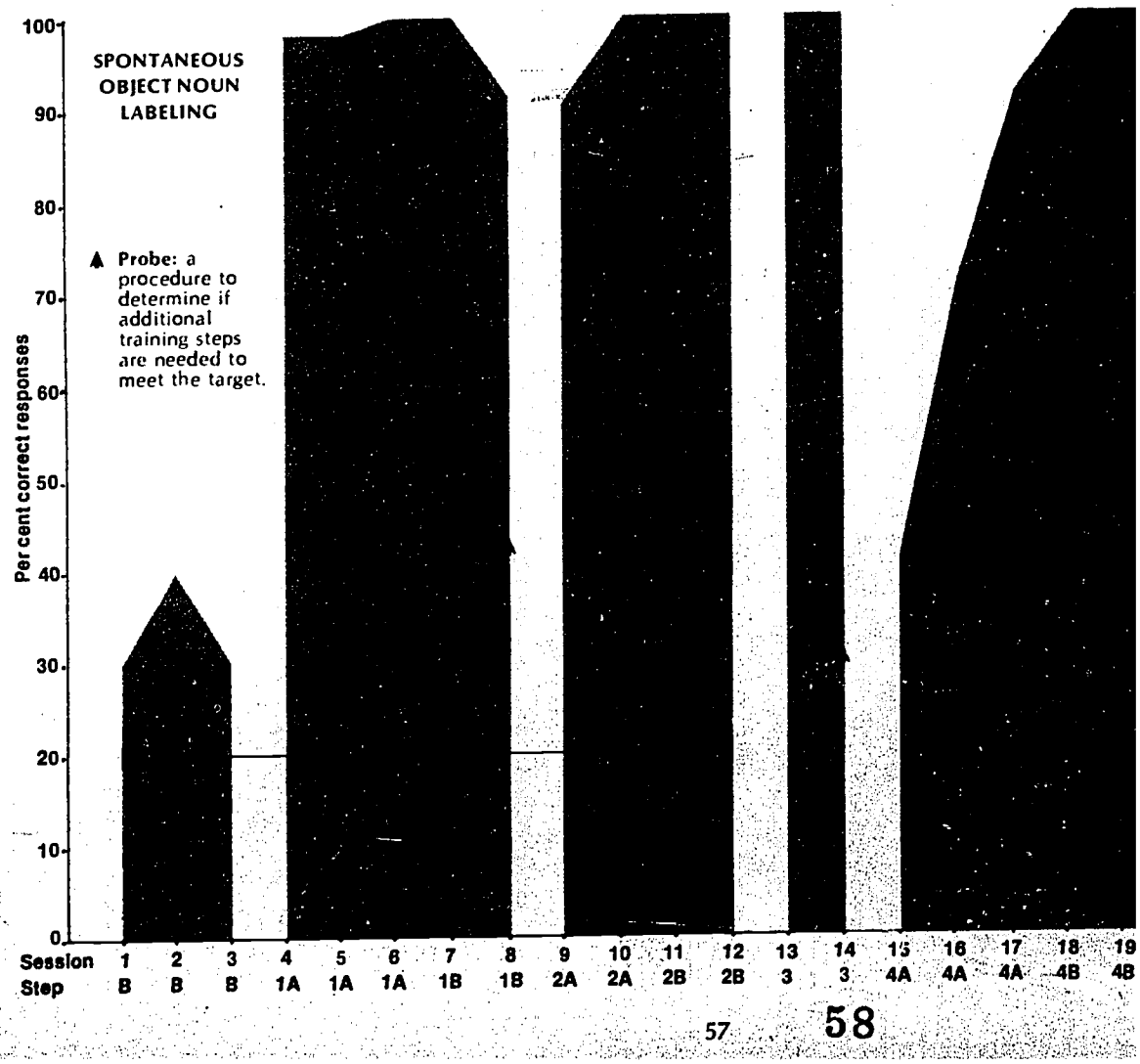

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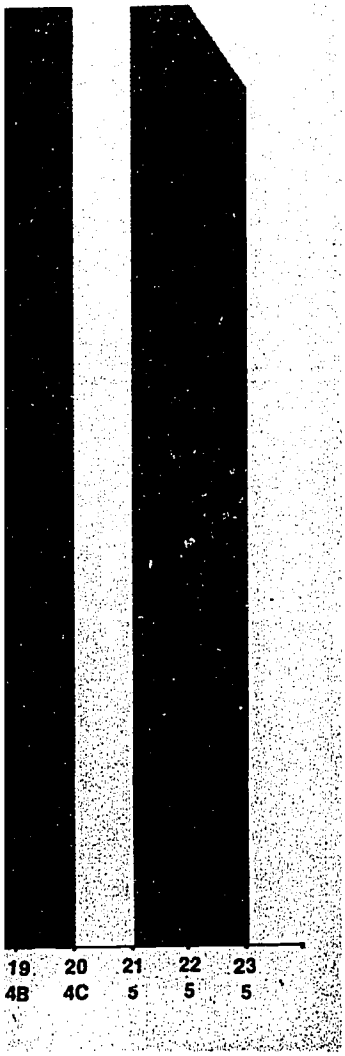


Result: The instructional objective was met in 20 sessions. It is felt that Peter is capable of exhibiting the target performance—looking, pointing and verbalizing—but he exhibited consistent inappropriate behavior, such as crying and turning away.

After 12 training sessions on attending behavior, Peter's correct response was 90 per cent or higher. Peter cried during the baseline period and also in the first, second, third, tenth and eleventh sessions. It is believed that careful selection of stimulus cues, social praise and edible reinforcers have helped to achieve appropriate social behavior, as well as imitative motor and verbal behavior.

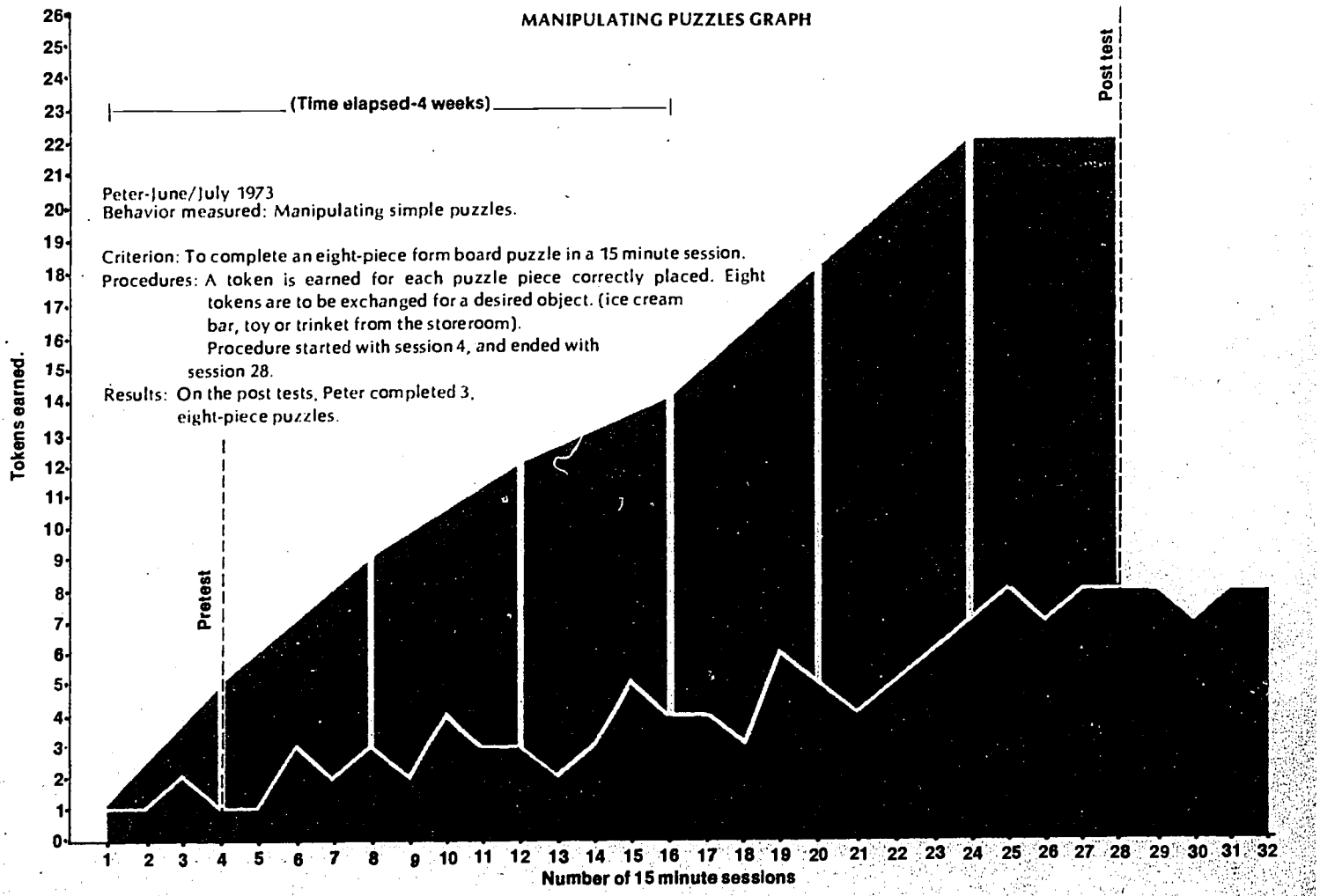
It is recommended that future training goals should be to increase labeling responses and complexity of verbal responding. It is also recommended that the reverse chaining procedure be utilized to increase word chains.

Speech Pathologist

Class

Peter appears to be a shy child, but he is beginning to express his feelings through language. He rarely resorts to crying spells that dominated his behavior during evaluation. Peter is aware of his peers and likes to watch their activities. His play shows both initiative and imagination. But, he frequently becomes so absorbed that he fails to notice others.

He is beginning to see himself as an individual capable of choosing and experiencing for himself. He is aware of his belongings and knows where his



locker is, and that his shoes and coat belong there.

Peter is not toilet trained. His pediatrician should be consulted to see that he has the necessary physical maturation to handle a toilet training program.

Peter's intellectual development continues to improve at a steady rate in all areas of skill development. He has developed trust in others and has self-confidence. Peter is now ready to cope with more difficult tasks such as colors, matching, simple counting and puzzles.

Peter has made excellent progress in language development. He does well in the *Distar Language Program,* and he is learning the concepts "is," "is not," "yes" and "no." Comprehension is excellent. He enjoys story time, is able to follow the plot and remembers songs and rhymes.

Goals are in social-personal growth such as self-feeding, toileting and dressing, as well as eye-hand coordination activities. He is unable to handle simple puzzles, block building, coloring and drawing tasks. A program to increase puzzle activities is under way.

Early Education Teacher

Summary

Peter has adjusted well to the total program. His tantrum behavior has decreased markedly. He is generally cooperative in most activities, although his low frustration tolerance has presented obstacles to skill development in some areas.

In physical therapy, Peter has made measurable gains in gross motor skills. He can roll nonsegmentally from prone to supine and supine to prone. He crawls in a prone position, pulling forward on his elbows. He balances momentarily in a tailor position, holds an all-fours position independently and supports his weight while standing in the parallel bars. He is beginning to exhibit protective extension sideways in the sitting position.

In Occupational Therapy, Peter is beginning to use finger foods. The use of a hi[illegible]backed chair in the home has he[illegible]d to facilitate feeding. Self-dressing skills have been delayed until Peter develops more trunk strength and better sitting balance.

In Speech Pathology, Peter has been encouraged to follow commands such as, "Look at the picture" and "Point to . . . (an object)," then to verbally label the object. After the first 12 sessions, Peter generally exhibited a high rate of response.

Physical therapist works with child while speech pathologist observes.

Peter remains shy in the classroom, preferring to play alone. He is aware of peers and enjoys watching them. His crying has diminished, and he is beginning to express himself verbally. He also has developed a better self-concept. He trusts others and can cope with more difficult tasks. Peter is improving at a steady rate in all developmental skills, especially language.

Recommendations

(1) Peter will continue to attend preschool four half-day sessions weekly. Classroom goals will include self-help skills and improvement in eye-hand coordination.

(2) He will continue to be seen three times a week in Physical Therapy. His immediate goal will be to assume the all-fours position independently. Once that is accomplished, his goal will be reciprocal crawling, along with further developmental, reflex and gait training.

(3) Graded activities to improve fine motor upper extremity function will be started in Occupational Therapy. Goals set at the time of Peter's evaluation will be continued.

(4) Future training goals in speech pathology will be to increase labeling responses and verbal responding.

(5) Classroom and Speech Pathology will coordinate efforts in speech stimulation and labeling.

(6) Staff will encourage Mrs. Y to continue involvement in Peter's program. Home activities will be suggested which should benefit Peter and increase Mrs. Y's self-assurance.

Early Education Social Worker

Staffing Report

Name: Peter Y
Birthdate: 7-4-70
Date: 7-20-75

In Attendance: Early Education Treatment Team

Purpose: To assess the child's progress in the total treatment program, and to discuss any changes in treatment that are indicated.

Background Information: Peter is five years old and his diagnosis is cerebral palsy. He has been enrolled in the early education project since October, 1972, and has been attending preschool four half-day sessions a week. He also is receiving physical, occupational and speech therapy. Peter lived in a foster home during his first year of life, but he has resided with his mother since then. When Peter was first enrolled in this program, Mrs. Y worked full-time.

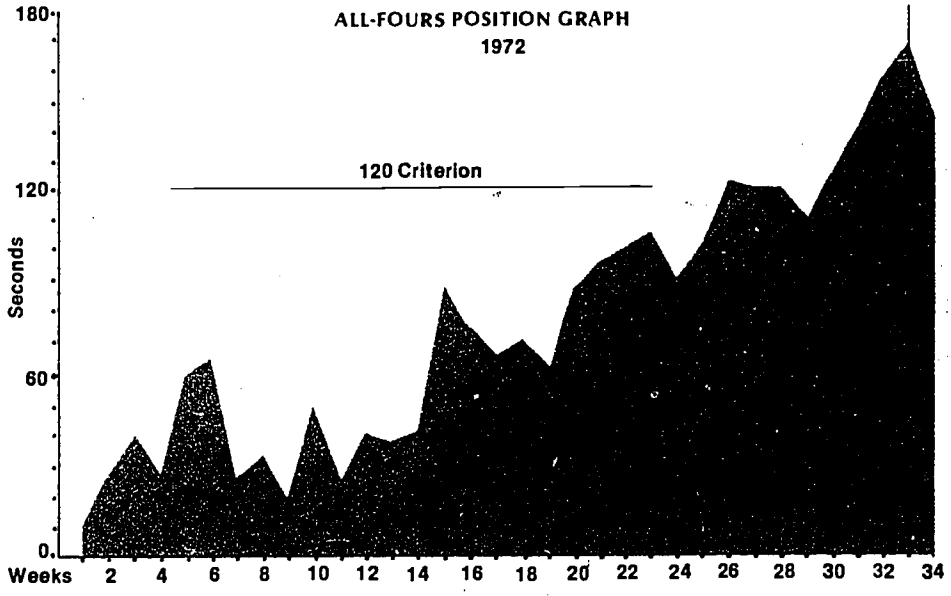
Recently, Mrs. Y remarried, and she has become more involved in Peter's treatment program. Peter's stepfather seems concerned about him, and Peter responds well to him. His home life seems to have stabilized significantly, and this along with therapeutic intervention, has helped Peter make good gains.

DEPARTMENTAL REPORTS

Physical Therapy

Peter has been seen three times a week in Physical Therapy. His behavior is much improved. He works well during the session, if rewarded intermittently with play activities.

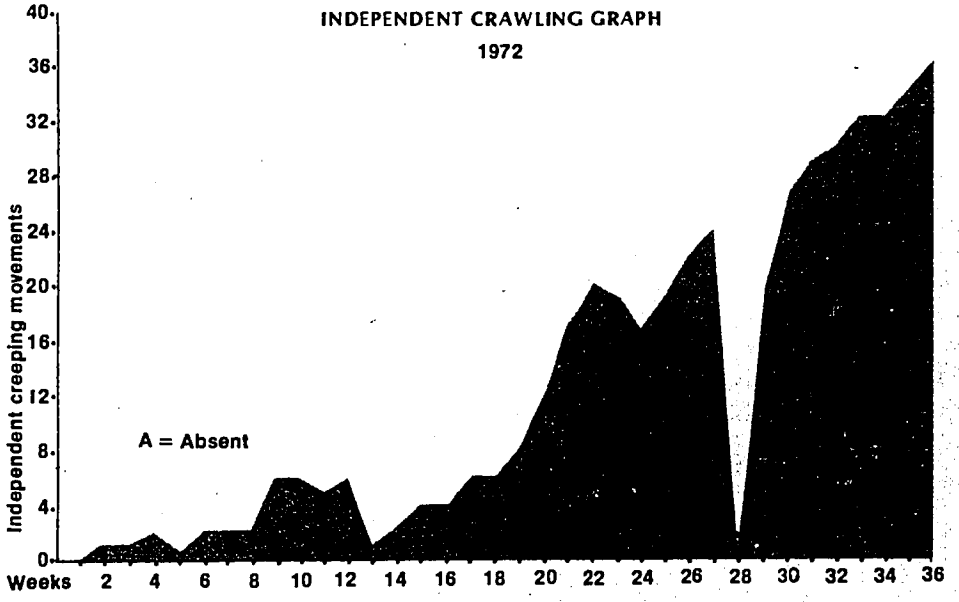
Peter's balance has improved in the tailor sitting position, and he is now able to assume an all-fours position independently and to crawl reciprocally.



Criterion: To hold the all-fours position independently for 120 seconds for four consecutive daily trials.

Behavior Measured: After being placed in the all-fours position, Peter is timed on how long he can maintain the position.

Results: After 32 training sessions, Peter reached criterion.



Criterion: To make 48 independent creeping movements consecutively.

Behavior Measured: Peter independently assumes an all-fours position. Event recording is used to count the number of independent creeping movements Peter makes consecutively. One number is recorded each time Peter moves one hand or one knee.

Results: After 36 training sessions, Peter did not reach criterion. He did progress from making no independent creeping movements to making 36 movements.

THE CAPPER FOUNDATION FOR CRIPPLED CHILDREN

Reflex Developmental Evaluation Form

Name Peter Y
Birth Date 7-4-70 Age 4yr 11mo Sex Male
Diagnosis Cerebral Palsy

Referring Service/Clinic _____
Physician _____
Examiner _____

Scoring: - absence of a response or finding
+ presence of a response or finding
Y - asymmetrical response or findings
L - left F - forwards
R - right B - backwards

ITEM	AGE SPAN ONSET	FADES	DATE L	R	F	B	DATE L	R	F	B	DATE L	R	F	B	REFLEX	COMMENTS
1.	Birth	1-2 mos.	-	-											Crossed extension	
2.	Birth	1-2 mos.	+	+											Flexor withdrawal	
3.	Birth	1-2 mos.	-	-											Positive support (neonatal type)	
4.	Birth	2 mos.	-	-											Ankle Clonus, 8-10 beats	
5.	Birth	2 mos.	-	-											Spontaneous stepping	
6.	Birth	2 mos.	-	-											Placing reaction (Proprioceptive (arms))	
7.	Birth	2 mos.	-	-											Placing Reaction (Proprioceptive (legs))	
8.	Birth	4-5 mos.	-	-											Palmar grasp	
9.	Birth	6 mos.			-										Moro (30° headdrop)	
10.	Birth	9-10 mos.	-	-											Plantar grasp	
11.	Birth	18 mos.	-	-											Extensor plantar response	
12.	0-2 mos.	4-5 mos.	-	-											Asymmetric TNR	
13.	1-2 mos. (1-6 mos.)	Inhibited (2 yrs.)	-	-	-	-									Labyrinthine neck righting reflex	
14.	3 mos.	12-24 mos.			-										Landau	LE Spasticity
15.	4-5 mos.	Persists	+	+											Placing reaction (visual and tactile (arms))	
16.	4-5 mos.	Persists	+	+											Placing reaction (visual and tactile (legs))	
17.	4-6 mos.	Inhibited (5 yrs.)	-	-											Neck righting on body	
18.	4-6 mos.	Inhibited (5 yrs.)	-	-											Body righting on body	
19.	5 mos.	Persists	-	-											Tilting reaction prone	
20.	6 mos.	Persists													Positive support weight bearing	LE Spasticity
21.	6 mos.	Persists	-	+											Protective extension of arms sideways	
22.	7 mos.	Persists	-	-											Tilting reaction supine	
23.	7-8 mos.	Persists	-	+											Tilting reaction sitting	Reaction Slow
24.	8-9 mos.	Variable				-									Protective extension of arms forward (Parachute reaction)	
25.	9 mos.	Persists					-								Protective extension of arms backwards	
26.	9-12 mos.	Persists													Tilting reaction-all fours	Not Tested Not Able to assume
27.	12-21 mos.	Persists													Tilting reaction standing	
28.	15-18 mos.	Persists													Staggering (protective) reactions	Not Able to assume
							-	-							Symmetrical tonic neck reflex	
							-	-							Tonic labyrinthine reflex	
			+	+											Associated motions	

DDDL-UNC--P.T. Experimental Evaluation Device 1968; Revised Oct. 1969 DDDL-UNC
Revised Feb. 1973 CRU-KU: Revised May, 1975 Capper Foundation

Peter's ambulation program also has progressed. He is able to walk 20 feet unassisted in the parallel bars. He has adjusted to his short leg braces, which he also wears as night splints. His gait is characterized by extension, adduction and internal rotation of the lower extremities. The braces seem to control the plantar flexion component, but the adduction and internal rotation cause Peter to scissor frequently. For this reason, an adduction board is used when Peter walks in the parallel bars. Peter also is able to walk a short distance with a rollator walker, when moderately assisted by the therapist.

Protective extension sideways in the upper extremities appears to be improving. Peter now can protect himself when he is tilted to the right, but is unable to do so when pushed to the left.

Reflex inhibiting patterns are included in the program, and a future goal will be to help Peter assume a tailor sitting position independently.

Functional wheelchair activities include learning to fasten his seatbelt and assuming a kneeling position next to his chair before he is helped into the chair. Peter has learned to lock and unlock his brakes, to unfasten his seatbelt, to get out of his wheelchair by himself and to roll his wheelchair.

Next year, Peter's goals will be to hold a kneeling position unassisted, to assume a tailor sitting position independently and to improve his gait with a rollator walker.

Physical Therapist

Occupational Therapy

Peter is receiving individual occupational therapy three times weekly. The goals are to improve upper extremity gross and fine motor coordination, to increase self-care skills and to improve sitting balance both in tailor sitting and on the edge of a raised mat.

Although Peter still has periods of crying and frustration, he is now beginning to realize that he can accomplish many activities if he tries them.

There have been measurable improvements in both gross and fine coordination. Through conscious control, Peter can now do many activities without forearm pronation. As the pattern of movement is used more, the amount of conscious effort required to keep his arm in a neutral position decreases. In September, 1974, a measurement was begun

using a chaining procedure to teach bead stringing. At that time, Peter was unable to string a bead. By October, he had mastered the process using a four-inch bead. When the measurement was discontinued in May, he was able to string one-half-inch beads.

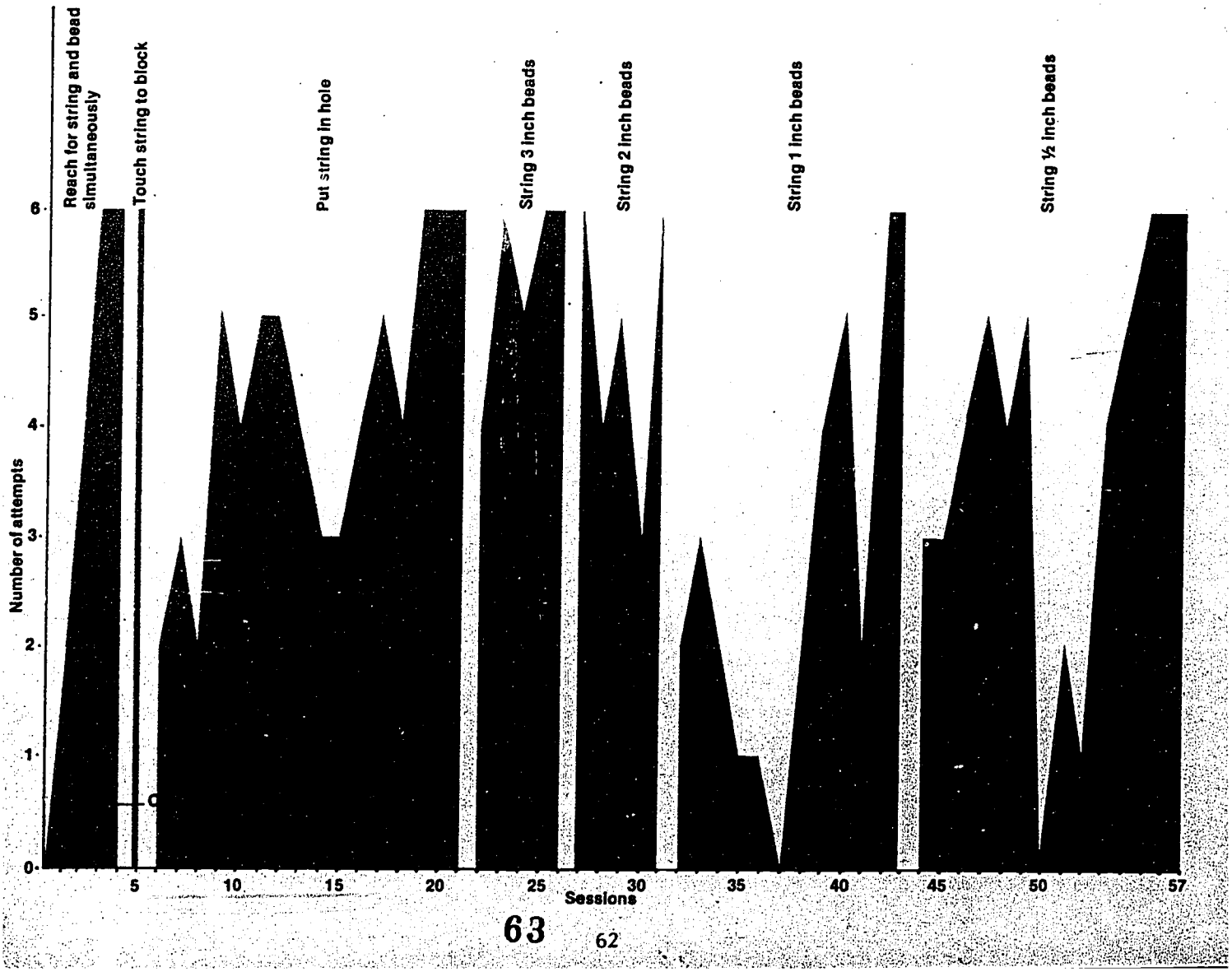
Because Peter's balance is still unstable, self-dressing activities are being deferred. However, predressing activities, such as the prebuttoning kit, have been started.

Peter sits well on a flat surface with no back or side support. He is able to sit this way using one or both hands for an activity. This position strengthens his trunk muscles and is used for a portion of each treatment session. Peter is encouraged to sit independently. He is now able to achieve a side-sitting position, but he needs assistance getting into a tailor-sitting position.

Peter will continue treatment in Occupational Therapy with the same goals. His program is coordinated with the Physical Therapy program to encourage gross and fine motor development.

Occupational Therapist

Criterion: To improve eye-hand coordination through bead stringing activity. Use a chaining procedure for the process, and grade the size of the bead gradually from four inches down to ½-inch. Record the number of successes for each step of the activity with a maximum possible of six. After each successful attempt, Peter was rewarded by being allowed to listen to a musical clock for a few seconds.



Speech Pathology

Objective: After 20 training sessions, Peter will be able to produce the Subject-Verb-Object (S-V-O) response, "I want (O)" for each of 10 functional objects, 100 per cent accuracy in three consecutive blocks. The responses will be analyzed and graphed by the clinician.

Procedure:

Condition 1: (A) Peter was reinforced each time he correctly imitated the object label in response to, "Peter, say . . ." with the object present.

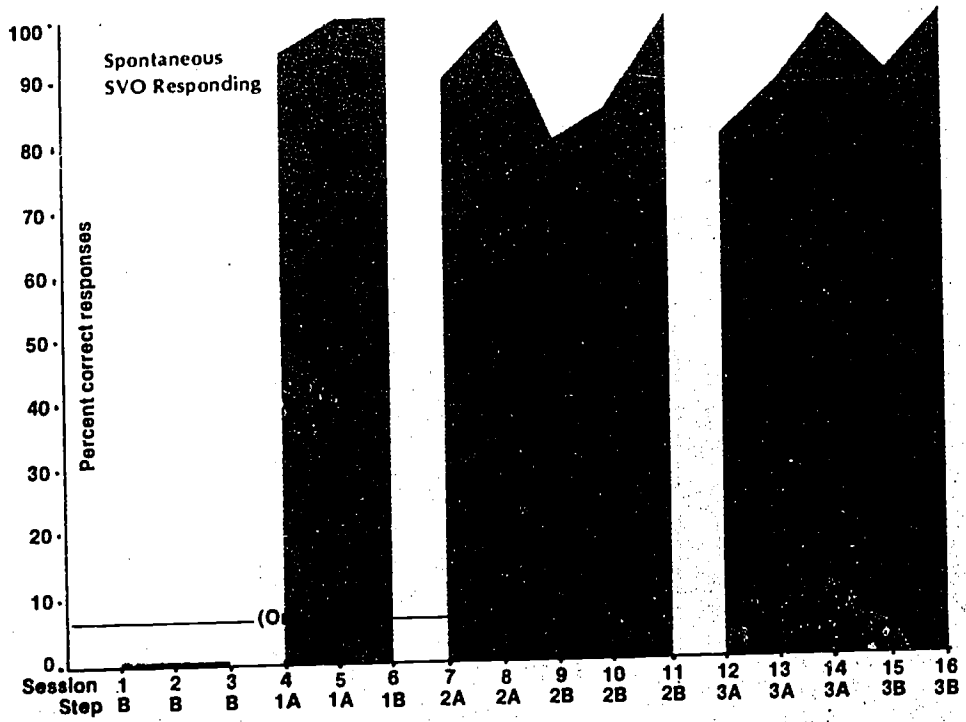
(B) He was reinforced each time he spontaneously labeled the object in response to the clinician's stimulus, "What do you want?" with object present.

Condition 2: (A) He was reinforced for imitatively responding to the clinician's stimulus, "What do you want? Say, 'Want...' " with object present.

(B) He was reinforced for spontaneously responding, "Want ...," to the clinician's stimulus, "What do you want?" with object present.

Condition 3: (A) He was reinforced for responding imitatively, "I want . . .," to the clinician's stimulus question with the object present.

(B) Peter was reinforced for responding spontaneously to the clinician's stimulus question with the object present.



Results: The training objective was met after 13 training sessions. At the beginning of training, baseline revealed he did not spontaneously produce the target response, "I want (O)" in response to the leader phrase. He met criterion for Condition I in three sessions, Condition 2 in five sessions, and Condition 3 in five sessions. At the conclusion of training, Peter was able to spontaneously produce the target response, "I want (O)" in response to questions from the trainer.

Further observation of his language production revealed he produced a wide variety of S-V-O combinations in response to selected picture and object stimuli on generalization probes. Language samples collected in Class and Occupational Therapy settings revealed appropriate S-V-O responding. Mean length of response was judged to be four words.

The *Receptive-Expressive Emergent Language Scale* was administered as a measure of language development, with the mother as the informant. Peter exhibited expressive skills appropriate for his chronological age. He exhibited some delayed receptive skills in understanding adjectives and prepositions and in relating experiences from the recent past. The mother felt that Peter's speech had improved considerably over this period.

Recommendations:

(1) It is recommended that Peter be dismissed from language training program.

(2) It is recommended that he be continued in the early education language stimulation class to meet certain deficiencies in receptive language. Exposure to good language models from his peers would suggest

continued language development appropriate for his chronological age.

Speech Pathologist

Class

Peter likes to act out everyday experiences. During his morning session, he and his clasmates play various roles, such as doctor, storekeeper and housekeeper. At times, Peter tests others, especially his mother, by having temper tantrums. Overall, Peter has been better adjusted, happier and more pleasant than at any other time.

Peter responds correctly 90 per cent of the time during the *Distar Language* sessions. He usually understands all concepts, and he talks frequently, using new and different words. He has a knack for telling "tall tales" and likes to listen to stories. Peter has excellent sequential memory and can correctly repeat a series of five numerals. He also has good comprehension and can repeat and understand an eight-word sentence.

Peter is doing much better in arithmetic. He now matches cards and can count five objects with correct pointing. He recognizes numerals 1 through 10 and is starting to understand the concept of time. Although he does not know the days of the week, he understands "today," "yesterday" and "tomorrow," as well as "morning," "afternoon" and "night."

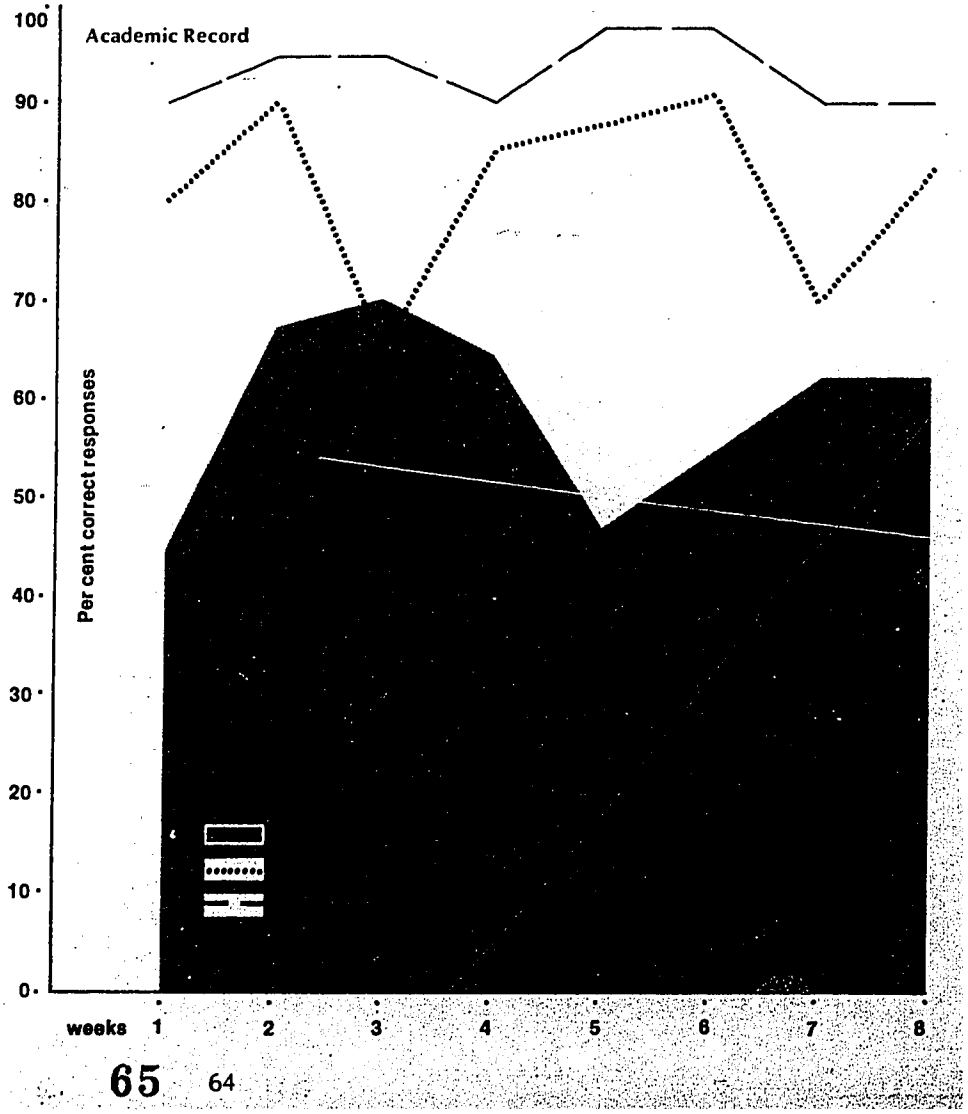
Peter knows and understands color, and he recognizes most of the difficult letters. These include Q, W, K, M, P, G, R, E, D, P, u, q, x, y, d, w, and h.

Peter's table activities are weak. He does not manipulate a pencil well in drawing and printing, nor does he fold paper, use scissors or color within lines. When asked to draw a circle, he scribbles repeatedly in a circular motion instead of drawing a once-around circle. Peter is unable to connect two dots with a line, and he continues to have trouble working puzzles, the peg board and most manipulative materials.

A primary classroom goal will be to work individually with Peter on all table activities, especially pencil skills.

Peter appears to be ready for advanced curriculum and a longer school day. He is a possible candidate for public school placement. To achieve this transition, advancement to a lower primary class is recommended for the fall term beginning September, 1975.

Early Education Teacher



Summary

Peter's behavior has improved significantly over the past months and he works well in all departments. He seems to be well adjusted, happy and pleasant most of the time.

In physical therapy, Peter continues to be seen three times a week. His balance has improved in the tailor sitting position. He can assume an all-fours position independently, crawl reciprocally and walk 20 feet unassisted in the parallel bars. He also can walk with a rollator walker with some assistance from the therapist. Protective extension sideways seems to be improving.

In Occupational Therapy there has been measurable improvement in both gross and fine motor coordination. Pre-dressing activities have been initiated in preparation for self-dressing, due to begin when his sitting balance stabilizes.

Peter is no longer seen in Speech Pathology. It is anticipated that regular participation in classroom language stimulation will maintain language skills and generate language development appropriate to his chronological age.

Peter has made good progress in the classroom. He has developed a vivid imagination and enjoys acting out everyday experiences with his classmates. He tells "tall tales" and uses different words readily. Peter has progressed well in many pre-academic skills, such as counting, matching and color recognition His weaknesses center around table top activities.

Mrs. Y is more relaxed and happy. She feels comfortable approaching the staff members and frequently stops to chat. She has developed some close friendships among other mothers and is active in the Mother's Club.

Recommendations

(1) It is recommended that since Peter sits well on a flat surface with no back or side support, this position be used part of the time at the center and at home. This will enable him to make better use of his hands.

(2) Peter's occupational and physical therapy programs will be closely coordinated to encourage continued gross and fine motor development.

(3) In the classroom, Peter will receive individual help with all table activities, particularly pencil skills.

(4) It is recommended that Peter move to the lower primary classroom in September, 1975, and that he be considered for eventual public school placement.

Early Education Social Worker

Early Education team members include (clockwise) Benith MacPherson, project director; Melinda Huston, occupational therapist; Jimmilee Prouty, social worker; Barry Molineux, speech pathologist; Deborah Lynn, physical therapist; Rita Popp and Lavonna Creviston, teachers.

In the fall of 1975, Peter-Y left The Capper Foundation's Early Education Project to enter public school.

He took with him our hopes, desires and dreams, for his progress is dramatic proof that early intervention does make a difference.

In a way the joy of his success is overshadowed by the fact that many young handicapped children are not as fortunate.

By the time Peter finishes first grade, nearly 1,300 children will be born in Kansas with physical handicaps. But even more disturbing is the fact that six out of ten handicapped children today receive no special care before their fifth birthday.

This means that the majority of handicapped children are wasting their most formative years as they wait to receive treatment.

But there is hope. A nationwide effort is under way to expand services for young handicapped children. For example, The Capper Foundation's Early Education Project is one of 150 centers in the United States established to develop early intervention programs.

The knowledge gained through these programs is being shared with others throughout the country who treat and care for young handicapped children. This manual is part of that effort.

And, in the months ahead, the early education team at Capper will be sharing its knowledge with others in Kansas at special workshops and seminars. Through these efforts, we hope to help people realize the importance of early intervention and to assist them in establishing programs.

We believe, as most people do, that every young handicapped child should have an opportunity to realize his or her highest potential. And, we know from experience that the opportunity is greater when the child begins treatment at the earliest possible age.

We simply can't afford to wait until later. We must begin at the beginning.

The Early Education Team

Appendix

A Forms

Speech —

Home Visit Record (evaluation of visit)
Training Sessions Data Sheet
Record of Attempts to Generalize Training
Reinforcer Tally Sheet
Speech Stimulation Parent Training and Evaluation Form Packet (6 forms)

PT - OT

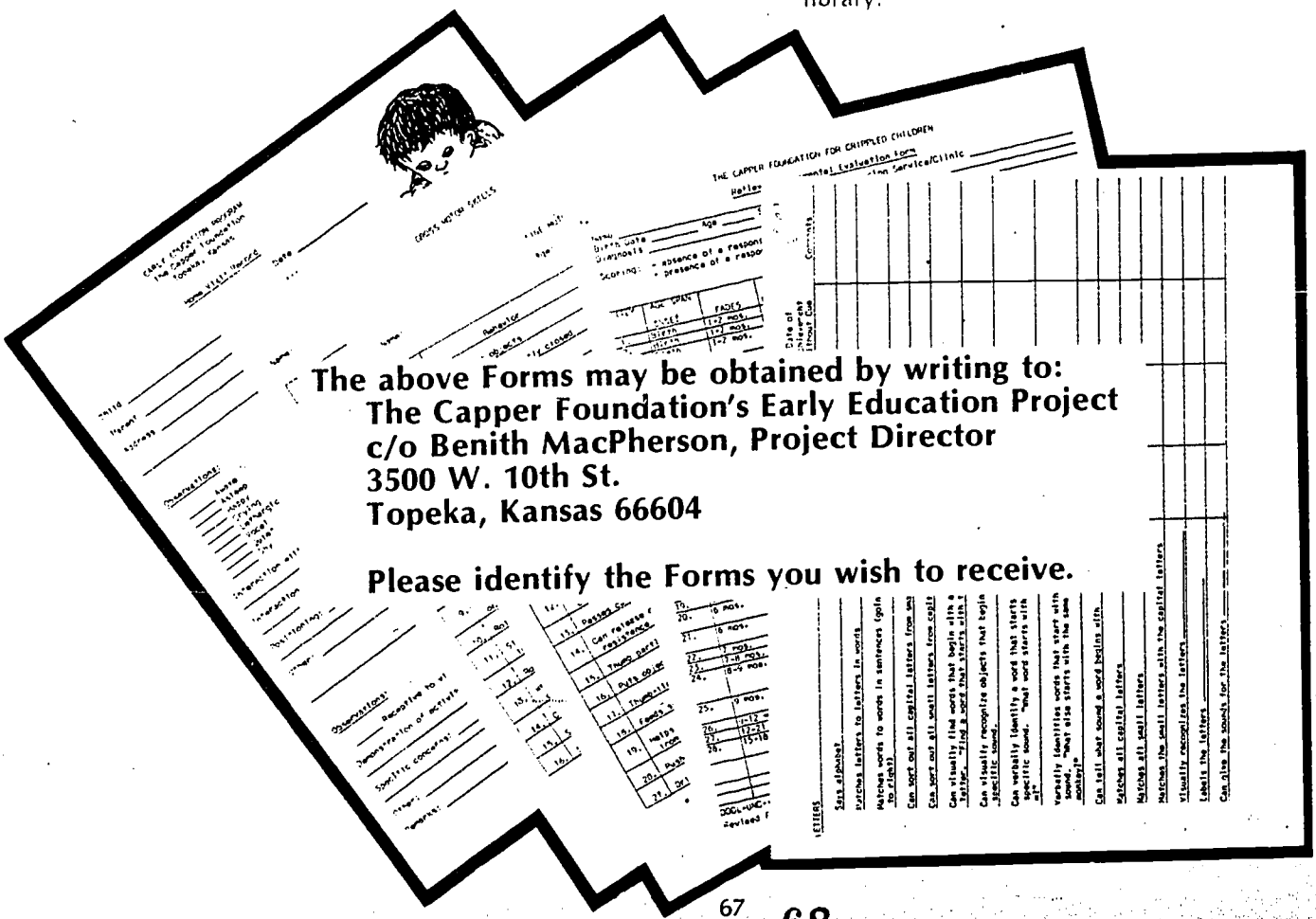
Fine Motor Developmental Scale
Gross Motor Developmental Scale
Reflex Developmental Evaluation Form

Social Work

Parent Program Evaluation Questionnaire
Staffing Report Form
Evaluation Interview Form

Preschool

1. Cognitive--Fine Motor, Personal—Social and Language Skills Assessment Form
2. Description of Cognitive Skills, 1-29 months.
3. Perceptual and Conceptual Skills Checklist
4. Evaluation Checklist on Language, Attention Span Knowledge of Self and Self-Care
5. Class Assessment Checklist for Letters, Numerals, Color Identification, Spatial Relations, Reading Readiness, Visual Memory, Fine Motor Skills, Social Skills, Attention Skills, Self-Image, and Self Care
6. Interest-Talent Questionnaire.
7. Description of how to set up and use toy lending library.



The above Forms may be obtained by writing to:
The Capper Foundation's Early Education Project
c/o Benith MacPherson, Project Director
3500 W. 10th St.
Topeka, Kansas 66604

Please identify the Forms you wish to receive.

B Long- and Short-term Goals For Physical and Occupational Therapies

TABLE I

CHILD A

I. **Long- and Short-Term Goal:**

Maintain range of motion in lower extremities.

Activities:

- Passive range of motion to hips, knees, ankles, toes;
- Instruction of the parent in active-assistive range of motion;
- Periodic goniometric measurements as needed.

II. **Long-Term Goal:**

Independence in putting on bilateral long-leg braces with pelvic band.

Short-Term Goal:

(1) Independence in buckling pelvic band.

Activities:

- Reverse chaining of buckling on ADL* board;
- Buckling on pelvic band.

(2) Independence in buckling thigh and calf bands.

- Practice this activity with braces on.

(3) Independence in buckling T-Strap.

- Practice this activity with braces on.

(4) Independence in tying shoes.

- Reverse chaining of tying on ADL board;
- Practice this activity on a toy shoe;
- Practice this activity on own shoe on foot.

(5) Independence in putting foot in shoe.

- Practice putting foot in shoe box;
- Practice putting foot in an oversized shoe;
- Practice putting foot in shoe not attached to braces;
- Practice putting foot in shoe attached to braces.

* *Activities of Daily Living Board—a board on which material is mounted. The material contains buttons, zippers, snaps, buckles or shoe laces. This puts the activity in a position which makes learning the process easier.*

TABLE II

CHILD B

I. **Long-Term Goal:**

Improvement of head control.

Short-Term Goal:

(1) Maintain head in 45 degree vertical position while prone for 30 seconds.

Activities:

- Play with toy or look at book while prone over a roll;
- Raise head to vertical position 10 times while prone over ball;
- Raise head to vertical position while prone on incline plane.

Short-Term Goal:

(2) Flex neck 90 degrees when pulled-to-sit by shoulders 10 of 10 trials.

Activities:

- With knees held flexed on chest and arms adducted onto chest, flex neck, increasing from one to 10 times;
- With knees flexed, flex neck when pulled-to-sit by shoulders.

II. **Long-Term Goal:**

Independence in segmental rolling from supine to prone.

Short-Term Goal:

(1) Independence in rolling segmentally supine to either side.

Activities:

- Using body-on-body righting reflex, facilitate segmental rolling from supine to either side;
- Using neck-on-body righting reflex, facilitate segmental rolling, supine to either side;
- Voluntary segmental rolling to either side to reach toy.

Short-Term Goal:

(2) Independence in rolling segmentally from supine to prone.

Activities:

- Using body-on-body righting and amphibian reflex, facilitate segmental rolling from supine to prone;
- Using neck-on-body righting reflex, facilitate segmental rolling from supine to prone;
- Voluntary segmental rolling from supine to prone to reach a toy.

(3) Independence in rolling into braces.

- Log rolling on the mat to reach a toy placed at one end;
- Rolling onto a blanket or marked area;
- Rolling onto the mat from the floor (from a lower to higher level);
- Rolling into braces with braces held by assistant;
- Rolling into braces independently.