

The NeuroScience Center of Indianapolis Day Treatment Program: A Year in Retrospect

Kathryn Gadbury



The NeuroScience Center of Indianapolis Day Treatment Program for head injured, learning disabled and developmentally delayed children will begin its third summer of operation this June. The program, which began in the summer of 1985 has now expanded into a full time program offered year round for preschoolers or youths unable to return to school due to injury complications. We feel that the Day Treatment Center is unique in its approach toward training or retraining of impaired cognitive functioning and the generalization of newly acquired skills to practical, real life situations. While traditional speech therapy, occupational therapy and counseling are offered, novel

multidisciplinary techniques are the main stay of our program. Consistency in provision of therapy and specific attention to carryover activities contribute to the successfulness of our intervention. Close communication with parents, school personnel and other therapists is believed essential to a child's progress at the center. This article will describe a child's progression from early diagnosis of a learning disability through neuropsychological testing, to therapy and subsequent mainstreaming into the school setting. Our patients' names will be kept anonymous and character symptoms discussed may be composites of a variety of students'

disabilities in cognitive, speech and language, motor and social areas.

Diagnosis

The main objective of the diagnostic session is not to provide a formal label, but to identify strengths and weaknesses in a child's cognitive functioning and to gain greater information about the nature and extent of a child's learning problems. Once a child's needs are identified, a program of remediation can be planned. Too often a child may experience years of frustration and failure before formal testing is attempted and deeper learning difficulties are revealed. Early diagnosis of a child's learning weaknesses may allow for early treatment and a successful school experience in later years.

The unpredictable nature of children, particularly the preschool child, clearly reinforces the need for a thorough case history and if possible, observation of a child in natural settings. Mrs. J. described her son, John, as "hyperactive, aggressive, and often prone to temper tantrums if he didn't get his own way." To Mrs. J.'s surprise John was attentive and cooperative throughout the clinical test session. Children described as outgoing and friendly may suddenly become nervous and withdrawn when in an unfamiliar setting. The trained examiner can find ways of dispelling a child's uneasiness and of gaining cooperation from a resistant child.

Parents often bring their child to the NeuroScience Center of Indianapolis because they are unsure of whether the child is developing normally in one or more areas. In establishing what is "normal" or "average" for a child, one must compare his or her test performance and behavior to normative standards for that child's chronological age and examine intrinsic strengths and weaknesses for that child. All children enrolled in the Day Treatment Program undergo extensive diagnostic examination either at our center or elsewhere. Previous school, hospital or clinic reports are requested in order to provide a realistic view of current functioning.

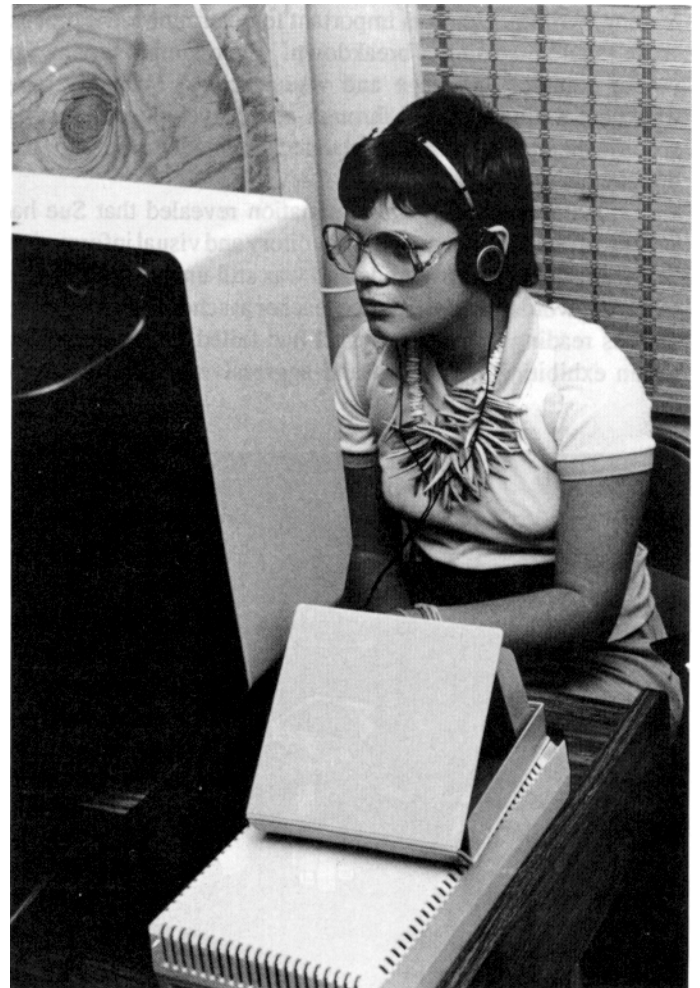
Test results provide a basis for establishing a program of remediation and are used comparatively to measure success in therapy. Results of an examination and recommendations are discussed in depth with parents during the interpretive session.

Day Treatment Therapies

Cognitive Rehabilitation Therapy

Cognitive Rehabilitation therapy is provided daily both in computer assisted and table top activities. A hierarchy of skills, beginning with basic attention and concentration, advancing through multiple attention and visuospatial tasks and continuing through memory and problem solving skills, is presented. Initial baselines are obtained so that the children compete against themselves when scores are tallied.

Most children in the Day Treatment Program have shown a special attraction to the computer. With the widespread exposure to electronic video games, children often view their computer programs as games and are unaware of the cognitive skill being addressed. Closely supervised therapy has enabled the children to develop strategies to overcome weaknesses in cognitive processes. Cognitive rehabilitation is designed to interface with and enhance a child's academic endeavors. Improvement in academic performance may be a



direct result of cognitive gains.

Those same skill areas addressed by computerized cognitive therapy are later generalized through table top and experienced based activities. For example, Simple Visual Reaction, a Foundations I basic program (a cognitive rehabilitation therapy program from Psychological Software Services, Inc.) for teaching patients or students to maintain attention and respond quickly to stimuli presented in any part of the visual field, can also be addressed in game activities. Children are asked to sit in a circle with their hands in their lap. When the therapist provides a visual signal such as raising a finger, the children must grab a block as quickly as possible. To make the game more challenging, a block is removed each time and players who do not maintain attention or who are not quick enough to grab a block, are out. The same game can aid auditory attending by asking children to grab a block when someone claps in an adjacent room.

Academically Related Skills

The focus of the Day Treatment Program is the enhancement of cognitive skills rather than academic skills. However, improvement in cognitive functioning has yielded greater success in the school setting. Some schools, after recognizing this, allow many of our young patients to now complete the computerized cognitive rehabilitation assignments at their school. Therapy assignments are coordinated so that the therapist and classroom teacher address weak skill areas in the same manner.



Basic foundations for learning such as attending, following directions, using appropriate study skills, organizational skills and completing tasks independently are all directly addressed in the Day Treatment Program. Behavior modification techniques have been used to reduce inappropriate behaviors and reinforce targeted skills.

When children fail in academic assignments involving math, reading, writing, etc., it is important to determine what process skills may be causing a breakdown. Even simple reading involves complex language and visual skills. When learning weaknesses are identified through neuropsychological testing, specific therapy exercises are planned to remediate the cognitive deficiencies.

A neuropsychological examination revealed that Sue had severe difficulties in sequencing auditory and visual information. She was repeating third grade and was still unable to read even two letter words. Sue's resource teacher at school had tried using various reading strategies, but all had failed. In addition, Sue began exhibiting frustration and aggressive behaviors toward other children when reading assignments were presented.

When Sue entered the Saturday Day Treatment Program for school aged children, she seemed interested in the computer cognitive assignments and relieved at the limited amount of paper and pencil tasks. Practical manipulative games involving the sequencing of objects and pictures were first introduced. Sue became adept at sequencing three and four items in both auditory and visual tasks. Visual symbols were also sequenced with success. Soon letter cards will be substituted for pictures and eventually, sounds will be associated with letter names to provide visual and auditory letter/sound association.

Speech Therapy

Traditional speech therapy in articulation, language, voice and fluency is provided in both a group and individual format. To generalize learned communication skills to spontaneous conversation, experienced based activities are carefully planned and executed through the joint effort of all staff members. Mere repetition of sounds and/or sentences from an artificial picture stimulus does not teach children the pragmatic or social use of



language. Therefore, very structured speech practice alone may fail to aid generalization of communication skills. Experienced based activities can capture the social intent of language and provide a functional basis for therapy.

Tom had poor language expression and moderate difficulties in auditory reception. To aid syntax and his ability to follow simple directions, all children and staff members participated in a pretend shopping trip. Tom was asked to retrieve one item from the grocery store. Before he carried out instructions, he was asked to tell other children in a complete sentence what he was going to buy. Verbal rehearsal of sentences aided comprehension, syntax and memory, and soon Tom was buying three to four items at our store.

Nonverbal preschoolers were encouraged to talk by the repeated association of speech and gestures. In gross motor activities children made sounds of a frog, train and plane as they imitated their actions. When throwing a bean bag at a block tower, children exclaim "boom" as the tower falls. Children may call out the names of others before they toss a balloon or ball to them. Creative play activities with puppets removed the pressure of elicited language tasks. Children often responded and spoke for a puppet when they were unwilling to initiate conversation on their own.

All speech efforts no matter how imperfect are rewarded. To promote communication growth, staff members are all trained in modeling and sentence

expansion techniques. Most questions are worded so that they require more than a "yes" or "no" response. If nonverbal children are not expected to answer, they may not. Therefore, staff members pause after questions in expectation of an answer. Children are given specific parts in finger plays, songs and stories to provide meaningful and fun language experiences.

Occupational Therapy (OT)

Children are seen by the Occupational Therapist individually or they are divided into groups based upon their functional level. A team approach to activity presentation is emphasized as much as possible. Specific OT activities concentrate primarily on gross and fine motor skills, perceptual motor skills, balance, coordination, laterality and tactile awareness.

Bob had difficulty drawing basic shapes and writing out his name. To help aid these fine motor skills, Bob was given tasks such as finger painting; drawing large shapes in sand or salt; chalkboard activities utilizing Bob's full range of motion; scissors activities (cutting on straight wide lines first and as he mastered this task the lines were narrowed); stacking small blocks; stringing beads by color, shape and size, and counting popcorn kernels.

The activities presented to the children try to incorporate as many skill areas as possible. For example, one activity Bob performed utilized small tongs to pick out a variety of objects from a box.



Not only was Bob working on his fine motor skills and eye-hand coordination but he was also working on his speech skills, memory skills and ability to follow directions. For instance, Bob was asked to pick out three objects in a specific order and then asked to describe those objects for the therapist.

Social Skills

The Day Treatment Program strives to provide a calm and relaxed atmosphere which can foster growth of social and emotional skills. Learning disabled, head injured and developmentally delayed children often have emotional problems related to their cognitive and/or physical handicaps. Problems in social and emotional adjustment are addressed indirectly and directly through group and individual activities. Children with greater adjustment difficulties are scheduled for individual sessions with their families.

Before children can control their feelings they must become aware of their emotions and their response to them. Karen had trouble sharing toys with peers and would often cry or act aggressively if others infringed upon her playthings. We encouraged Karen to identify her anger before she hit others and substitute appropriate releases of frustration. Large motor play activities allowed Karen to release excess energy and vent frustrations. Throwing velcro ping pong balls at a target and punching a balloon on a string were other acceptable outlets used.

Bobby's speech and language deficiencies made it difficult for him to express and understand feelings. He had many unreal fears and had slept in his parents' room at night for nearly a year. Pictures portraying a variety of feelings were discussed. Children took turns imitating in the mirror, facial expressions associated with feelings. Children were encouraged to talk about and act out things they feared. Bobby role played ghosts and monsters, while others pretended to be snakes or spiders. Puppets were used to reenact fearful experiences so that the children could successfully deal with their fears. Bobby now seems to have greater control of his fears and a better understanding of real and imaginary dangers.

Children learn a sense of responsibility by participating in meal preparation and clean-up. A special job board gives each child a daily duty.

Children are praised and rewarded for their accomplishments. Often these jobs create greater opportunity for group interaction. A soft spoken, shy youth suddenly became more verbally assertive when his job as messenger required him to deliver important messages to the office.

Lengthy staff discussions yield discipline policies which are clear and concise. Children learn to accept the consequences of breaking classroom rules and the staff learn to consistently deal with inappropriate behavior through time out procedures.

Summary

As we review the past year's Day Treatment Program, we have learned that all children are unique and have special needs. Whether a child's motor difficulties stem from a broken arm or permanent paralysis, they are still required to learn adaptation techniques to reach their full potential. Our belief is that each child's unique needs should be identified so that a plan of remediation can be enacted. Labeling children rather than needs may cause parents, educators and children to underestimate potential. Therefore, the Day Treatment Center has attempted to meet the cognitive, motor, speech, language and social needs of its students. Through trial and error we have translated theories into practice and have yielded practical strategies that could be utilized by all staff members. Our program continues to expand and change. We hope that our children's lives will be enriched through our efforts.